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ADDRESS.

CHAIRMAN'S ADDRESS.

Delivered in the Section on Stomatology, at the Forty-eighth Annual Meeting of the American Medical Association held at Philadelphia, Pa., June 1-4, 1897.

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It is the usual duty of the Chairman of Sections of this ASSOCIATION to give, in an annual address, a review of all matters new and important that have a special interest touching the scientific character of the work of the Section to which he may belong. It has been thought best to modify to some extent the nature of the subject on this, the occasion of the Golden Anniversary of the AMERICAN MEDICAL ASSOCIATION, and to give in place a brief history of the work of the Section in the past. The history of our Section is one of which we may well be proud. Our meetings have been full to overflowing with interesting and valuable papers and discussions, and there have been many brilliant lantern exhibits. The work has been in the main along the line of higher themes in the realms of scientific research, and we may rest assured that by comparison with the programs of similar organizations, the work of this Section does not suffer. This statement needs no defense. It is, I believe, already conceded.

In the year 1880 the men who largely represented the brain and sinew of our profession, believing that dental surgery then held a position beneath that to which it was entitled, and believing that such a condition should be remedied, felt it their duty to devote a portion of their time and energies to bring about a change for the better. These men earnestly believed that dentistry was a specialty of the healing art, and as such should have representation in the sessions of the National medical organization. They were actuated by no narrow views. Their sole purpose was the up-building of their profession. Presenting themselves at the meeting of the AMERICAN MEDICAL ASSOCIATION, held at Richmond, Va., in 1881, as delegates from local medical societies, they proposed the organization in the ASSOCIATION of a separate Section on Oral and Dental Surgery. These delegates were Drs. W. W. Allport, T. W. Brophy and Eugene S. Talbot of Chicago; Dr. J. L. Williams of Boston; Dr. G. L. Goodwillie of New York; Dr. Hauxhurst of Grand Rapids, Mich., and Dr. G. L. Parmlee of Hartford, Conn.; all practitioners of dentistry holding medical degrees. Each gentleman constituted himself a committee of one to champion the movement among the members of the ASSOCIATION who were in attendance. They found no opposition whatever; on the contrary the oldest members, and especially the ex-president of the ASSOCIATION, were heartily in sympathy with the movement and anxious to assist in bringing it about. At the morning session on Thursday, May 5, Dr. Samuel D. Gross of this city, addressing the ASSOCIATION, asked for a suspension of the regular order of business. This motion was granted. He then moved that the by-laws of the ASSOCIATION be so amended as to create another Section, to be known as Section VII, entitled "Dentistry." The motion was favored by Dr. Sayre of New York and Dr. N. S. Davis of Chicago, and was adopted. The object of suspending the rules at this time was for the purpose of creating the Section that it might commence work at that session, the members who were to constitute the Section being prepared with papers for that purpose. Dr. Toner of Washington objected, saying that he was not opposed to the Section organizing and commencing work that year, but he did not wish to make a precedent for future Sections. It was therefore decided that it could not go into operation until the next year, when according to the Constitution and By-laws of the ASSOCIATION, dentistry was officially recognized by the AMERICAN MEDICAL ASSOCIATION.

The Dental Section has met with the ASSOCIATION every year since its formation. The quality of the papers presented, from a scientific standpoint, has been of the highest order. Our place is now here where it seems to me it ought to be, among the specialists of the great guild of physicians, a part of the body of scientific men whose life work is the amelioration of human suffering.

In the annual address delivered before this Section at its last meeting, I gave the result of my investigation of the development and structure of the dental enamel, and in a friendly way criticised some of the views of another writer, who had recently written on the same subject. I have given considerable time to the further investigation of this subject, preparing a paper which I read before the Institute of Stomatology of New York, in February last. This paper was discussed by some of the more eminent biologists of that city, who substantially agreed with me in every point presented to you at our last meeting. The only important point on this subject I have to present as new matter, is the fact, unnoticed before, that some of the globular bodies that have been deposited by the ameloblasts to form the enamel rods, are not homogeneous masses of substance, but are globules having within their substance aggregations of minute spheres (calco-spherites) which for some reason have not coalesced into a mass. These minute globular bodies are held together by what appears to be an envelope or membrane, the whole forming a globule of the same size of what I may call the normal enamel globule at its point of calcification. In some of my sections I have found these enamel globules containing the minute spheres covering quite an area of forming enamel, and they are shown in this condition as they are drawn down into the calcifying rod. They are more than likely calcified in this condition.

It would appear as though it were a fault of structure, perhaps some arrest in the developed mental process. Of this I can not be positive, but the appearance would seem to account for the minute globular structure seen within the rods of the calcified enamel as shown in some of Dr. Williams' illustrations.

A very valuable contribution to the study of the pathology of the enamel, by Dr. J. Leon Williams of London, has recently appeared in the pages of the *Dental Cosmos*. While the subject matter of the text is not altogether new to those familiar with this line of investigation, the lucid way in which the subject is presented, and the very thorough descriptions of the minute pathologic conditions of the tissues involved, together with the great beauty of the large number of illustrations, make it the most notable contribution to the literature of this subject that has yet been presented to the dental profession. He has given a large mass of evidence and the labor must have been enormous. Being familiar with the extreme difficulty of preparing sections of enamel for photo-micrography, and knowing something of the time required, I can fully appreciate the great work Dr. Williams has accomplished. This series of papers follows along the line of investigation given in one I read before this Section in the year 1890, on "A Study in Dental Pathology, Including Pits and Fissures of the Enamel," but is much more complete. I can heartily agree with Dr. Williams in most of the conclusions advanced, and trust we may have this work published by itself in a more permanent form, for reference and for the use of students in our educational institutions.

The year that has passed has pretty conclusively proven that the use of dental cataphoresis may no longer be considered as in its experimental stage, in so far as its investigations relate to the obtunding of extremely sensitive dentine, and its value in bleaching badly discolored teeth. There are a few still doubtful about its future effect upon the life and health of the dental pulp, but the majority of cases reported have been remarkably successful and attest to its undoubted value. The method has also been found to be certain in its action, in fully obtunding exposed pulps prior to their removal. Investigations are being made by this method which promise success in the treatment for the relief and cure of chronic cases of pericementitis by a perfect system of sterilizing root canals at the time of filling. It has been found that almost any good kind of antiseptic can be used; oil of cassia, hydrogen dioxid, chlorid of zinc and silver nitrate have all been tried with success, the method of using being somewhat like that used for obtunding sensitive dentine. This treatment is said to allay the pain in a short time and to place the tooth at once in a condition for immediate root filling. The results obtained by using silver nitrate are significant. Sections made from teeth which had been treated by a solution of silver nitrate by Dr. Bethel of Kent, Ohio, were sent to me for microscopic examination. The higher powers of the microscope revealed the fact that the silver salt had been forced by the current a very considerable distance into the dentinal canals, and each canal had been completely sealed up by it. As the dentine of the root is almost always infected by a putrescent pulp, which sends its organisms into the canals of the root, we can clearly see the importance of this perfect method of sterilization. In the treatment of pyorrhea, the cataphoric method of medication has been found to be a valuable acquisition, and in some cases it has been claimed to have been used with considerable success in facial neuralgia. The very considerable value of the application of the X-ray as an assistance in diagnosis in our specialty, has been repeatedly demonstrated during the year that has passed. It is now possible to make sciagraphs, or shadow pictures, of any part of the mouth and jaws, showing the teeth in proper relation with their alveolar sockets. The roots of the teeth being denser than the bone which surrounds them, show clearly throughout their whole length, and we are thus enabled to note any peculiarity that may exist. In the city of Boston there is one of our profession who has made a special study of this work. He has succeeded in making some very remarkable demonstrations. Many of his pictures are of unerupted teeth deep within the tissues of the jaw. It is possible to show fragments of roots that are the source of obscure troubles. One picture shows a broken pulp canal drill just beyond the apex of the roots that for months had been the cause of a most troublesome abscess. The broken drill was removed, resulting in a perfect cure. It is yet doubtful if we shall be able to determine diseases of the tooth pulp by the X-ray, but authorities assure us that by it it is possible to diagnose necrosis, tuberculosis and exostosis. They claim that diseased conditions cast a shadow differing from normal tissue, and thus the disease is readily demonstrated.

The question regarding the endowment for dental research has recently been brought to our attention by a letter to the *Dental Cosmos* from Dr. C. E. Kells, Jr. He believes that an incalculable amount of good would result to our profession from such compensation for original investigation. The importance of the matter presents itself to us at this time largely on account of the recent magnificent work of Dr. Black and Dr. Williams, and it is earnestly hoped that a fund sufficient to continue these investigations may be appropriated by individuals and societies, that this important work may continue. To quote in part an editorial from the April *Cosmos:* "Nature reveals her hidden secrets to those only who have learned how to question her and who are able to interpret her answers; she demands of her devotees absolute fidelity, uncompromising honesty, unflinching accuracy, absolute self-abnegation and never-flagging enthusiasm in her cause. To meet these conditions requires the expenditure of much time and energy, and just so far as the time of the investigator is occupied with matters foreign to his calling, will his results be curtailed. It would be well to utilize his abilities for the general good by placing him beyond the demands which the necessity for maintenance imposes, thus securing for all those advantages which the entire devotion of his abilities to scientific research would entail."

This matter is a subject that merits our earnest consideration. Within the past year there has been a movement on the part of some of the dentists of the city of Baltimore to bring about the enactment of a law that shall require the examination of the condition of the mouths and teeth of the children of the public schools. The importance of this movement may not at first thought seem to be as serious as it really is, but if we consider it carefully it will be found grave enough to enlist our most careful consideration, fraught as it is with serious consequences, both to the present and future, and a law of this kind

should be enforced in every city in our country. The time of life that the school years cover is very important to the child from the dental standpoint. If the teeth are cared for during this period, the chances favor their permanent retention and for this reason, if for no other, this movement should be urged and encouraged by every intelligent dentist.

The connection between bacterial growths in the oral cavity and severe disturbance of the general health is today well known. There are those who carry more filth in their mouths than they would tolerate on their skin. And this is the condition of the mouths of many of our school children. There are those whose teeth receive very little, if any, care; on inspection they will be found to be covered with a thick deposit in an active state of fermentation. In these mouths we shall find the gums inflamed, suppurating and decayed roots with chronic abscesses continually discharging their putrefactive products into the mouth. The fact that such mouths may be the source of disease and even death has been very much underrated. It is known that pulmonary diseases are brought about by the "inspiration" of germs from the oral cavity. The mouth is a veritable breeding place for the infection of the digestive apparatus.

Prof. W. H. Miller of Berlin by experimentation with cultures, estimates the number of cultivable bacteria in a very unclean mouth at over a billion. Many of these, he thought, were carried to the stomach at every meal, to be replaced by others developing between meals and over night.

I doubt if there is a better culture medium to be found for the growth and multplication of the pathogenic bacteria than the exposed decaying dentine of the human teeth after the enamel has been destroyed and the dentine decalcified. In it we have a substance perhaps more favorable for the growth and development of these organisms than any other tissue. This in itself is a very significant fact of which we should not lose sight while considering this subject. There should be special care on the part of those who of necessity are brought into close contact with persons suffering from contagious diseases. Many children in our public schools inherit a tendency favoring a development of these troubles. In our crowded, hot and insufficiently ventilated schoolrooms the inhalation of micro-organisms and the cultivation of these organisms in decaying dentine may be, and probably is, the cause of disease and death. Of all the ills that man is heir to the most appalling in its dire results is tuberculosis. Today it is known to be communicated by infection alone, the infecting agent being the bacillus of the disease. It blights all who come within its grasp, sapping the life blood and making the life a wreck followed by misery and death. The children of the poor, especially the immature and sickly, are most susceptible to this disease. In a paper recently published in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION on tuberculosis infection from food the author, Dr. Charles E. Winslow, tells us that there is an increasing anxiety among thinking medical men due to the resistance of tuberculosis to the advanced curative remedies. All come far short in checking this most formidable of all diseases. The most advanced investigators believe that the colonization of Koch's bacilli in the animal tissue is the cause of the disease. If this be true, and there can be little doubt of it, it gives ground upon which we can work out our own salvation by controlling the spread of the disease. Our children are fed largely on milk, and the most common disease of the cow from which the milk comes is tuberculosis. Very little milk reaches our city free from a mixture with milk from tuberculous animals. The close relation that exists between the cow and the human family renders it possible for the spread of this frightful malady and for the child's best friend to become his worst enemy.

In an article on carious teeth and tuberculous cervical glands Stark, in the *Revue de la Tuberculeuse*, July, 1896, notes the frequent association between carious teeth and enlargement of the cervical lymph glands. He examined 113 children with the enlargement of lymph glands and found that 1 per cent. had carious teeth. Not being able to find any other apparent cause for the condition, he concluded that the swollen glands resulted from the defective teeth. They correspond in situation, in time of development and in the degree of enlargement with the condition of the teeth.

The involved glands were situated on the same side as the diseased teeth, the anterior glands being enlarged if the incisors were carious, and those at the angle of the jaw when the molars were involved. Toothache frequently preceded the enlargement of the glands. Stark is of the opinion that the enlarged glands are tuberculous in quite a number of these cases. He reports two in which he was able to demonstrate pretty conclusively that the carious teeth had been the point of entrance of the tubercle bacilli. One, a boy aged 18 years, who had always been healthy and without a family history of tuberculosis, had caries of the molar teeth on both sides with enlargement of the cervical glands. The glands were excised and the teeth extracted. The former proved to be tuberculous and tubercle bacilli were found on cover slip preparations from two of the decayed teeth. The second was a girl of 14 years, with excellent personal history and without a history of tuberculosis in the family. The first inferior molar tooth on the left side was carious and there was an enlarged gland below the ramus of the jaw. The gland was removed and showed definite tuberculous disease. Between the diseased molar and the adjacent tooth and also forming the floor of the cavity in the tooth were characteristic tuberculous nodules with typic giant cells. This latter case is especially interesting as it seems to show that a carious tooth may be the seat of a primary tuberculous focus. With regard to treatment, the glands should at once be removed and the carious teeth be either properly filled or extracted. As a prophylactic, the teeth should be better cared for, and Stark advocates, with Röse, the placing of all school children under supervision.

An interesting case has just been reported to me by a dentist. A boy, about 16 years of age, who was an invalid and whose teeth were so extremely sensitive that he could not or would not have them filled when they were decayed, had trouble with his cervical glands and had them operated on, with relief for a number of years. Afterward it was found that other glands were infected with tuberculous disease and the patient was taken to New York for treatment. The surgeon who performed the operation of excising the infected glands, insisted that all the decayed teeth in his mouth should be at once removed, giving as his reason that the decayed teeth were largely the cause of the infection.

Another case was reported to me, in Cambridge, of

an immature child, who having trouble with the cervical glands, had them operated on by a local surgeon. Some little time afterward symptoms of tuberculosis set in and the surgeon who performed the second operation thought it might be probable that the child had been infected by instruments used in the first operation, the family history showing no signs of tuberculosis. It was stated to me that the molar teeth of this little patient were very largely decayed, and with our present knowledge it seems more than probable that this terrible infection was brought about by the organisms of this disease, which were cultured in the decaying dentine of the molar teeth.

The importance of dealing with this subject must commend itself to us. In many of our States there are commissioners whose duty it is to make examination of cattle suspected of having this disease. The cattle found infected are destroyed. Does it seem less reasonable that we should try to prevent our school children becoming infected? It is a matter that should come home to every family, who would surely desire such supervision after understanding the importance of the subject, if by any possibility it would shield their children from this terrible infection. For this reason they should support a law directing such examinations to be made in our public schools.

The important question we have to consider is: How are these examinations to be brought about? One correspondent states, "if your board of school commissioners is the same as ours, a request of this nature would be looked upon as an unwarrantable piece of interference, a bid to obtain practice." This same writer, however, acknowledges the true charity and philanthropy of the movement. Another says, "if the dental societies are sufficiently in earnest and sufficiently united to pledge themselves to furnish competent members of their bodies at regular periods of each year, a committee from those societies could petition the board of education to appoint an examining dentist to each school." This suggestion, it seems to me, is a most excellent one. Our profession should do more in the way of public charity than it does. We do very little compared to the gratuitous services rendered by the medical profession. The first move should be through the State board of education by the State dental organization. All school children under the care of the family dentist should be required to present to the masters of each school a certificate signed by their dentist. This should be considered sufficient evidence of the healthy condition of the child's mouth. All other children should pass the required examination. An expert could make an examination of each scholar in from three to five minutes. In most of the large cities there are one or more dental colleges with infirmaries for the treatment of all such cases. In these cities the children of the poorer classes should be sent for proper treatment. In cities where there are no colleges, dentists can be appointed by the dental societies to attend to this charity work. The boards of school commissioners in the various States are men of culture and liberal education. They can not fail to see the necessity for such dental supervision, if the matter is presented to them in the proper manner. It will be apparent that such examinations are for the real interest of the children, and an act of real charity and philanthropy, guarding the common welfare and safety of those under their care.

The matter is of such vital importance, that we should seek the co-operation of every dental organization in this country to aid us in our efforts to bring about the examinations and treatment of the mouths of the children in our public schools; who better than they can recognize the justice and importance of this matter. It will save the children from sorrow and suffering, and in many cases such supervision will triumph over disease and death.

LECTURE.

THE MEDICAL PROFESSION.

A Lecture to the Students of Shurtleff College.

BY JOHN B. HAMILTON, M.D., LL.D.
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It is with pleasure that I respond to the polite request of the energetic and distinguished President of Shurtleff College and speak to you at this time and place. The subject assigned was part of your annual series, and one naturally congenial to me. I feel, however, very deeply my sense of responsibility of inadequately treating so vast a subject and of doing justice to a profession which is only junior to that of the priesthood itself, and has proceeded from such an early period of time that its records blend with the legends of mythology and the Vedas, Vagas and Charakas of oriental lore. The friends of Shurtleff College should take a deep interest in matters pertaining to the medical profession; for, its name is due to a member of that profession, Dr. Benjamin Shurtleff, of Chelsea, Mass., its founder.

As to the origin of the profession of medicine, modern investigation has shown that the most ancient traditions and records of the nations of the West refer to the "learning and wisdom of the East," and that a study of the origin of the medical art is not finished when the Greek and Latin classics have been explored: but it even goes back beyond the time of the most ancient Egyptian physicians and embalmers. The great school of the Hindu physicians was known to the ancient Greeks, and "when Alexander, after having conquered Persia, was approached, Taxiles endeavored to conciliate the great envoy by presents, saying I shall send to the Great Conqueror, your master, my beautiful daughter, a goblet made of ruby that miraculously replenishes itself with liquid, a philosopher of great knowledge of the sciences, and a physician who has such skill that he can restore the dead." (Malcolm, Hist. Persia.)

The Charaka Samhita, now being republished and translated into English in Calcutta by the learned Pundit Avinash, shows an intimate knowledge of dietary preparations and of the means of preserving health, which is remarkable, considering as we now understand it, that most of their knowledge of anatomy was derived from dissection of the lower animals, as although the rule that there is nothing new under the sun doubtless applies to most things, it does not appear from the records that there were any antivivisectionists in those days. It is known that the ancient Hindus carried their knowledge of astronomy back to the year B. C., 1181 according to Archdeacon Pratt; 1168, B. C., according to Rev. R. Main's calculation, and it is said that the ancient Brahmins, who devoted their entire lives to the cultivation of an education of poetry, astronomy, medicine and religion, excelled in geometry and algebra, which antedated the Greeks, perhaps Euclid himself.

Wise, in his review of the history of medicine among the Asiatics, considers that the Charaka and Susruta were prepared at a very early age, probably from the third to the ninth or tenth century before the Christian era. This conclusion is arrived at from the following considerations:

"1. They were written in the most ancient form of construction of the Sanscrit language.

"2. They were considered to be the production of divine beings, and mentioned by ancient authors.

"3. These medical works must have been written at a time when there was no prejudice of caste, and looking at the sun or stroking a cow was considered sufficient to purify a person who had touched a human bone.

"4. In Charaka the names of the Munis were mentioned, who flourished before mythology was introduced into the Hindu system of religion. They subsequently had in connection with the names all their gods who were afterward most probably introduced by degrees as the various objects and operations of nature were defined and named.

"5. The authors or compilers of these two systematic works on medicine appeared to have flourished in an heroic age, or previous to that in which the Mahabharata, the great epic poem, was written, as they are mentioned in several places of that work, which, according to Wilson, was composed about the second century before the Christian era."

These works are to be regarded as summaries of the knowledge of medicine which was possessed at the time and were probably compiled from medical works previously existing, as the names of various ancient physicians are mentioned. The Hindus made many researches into the chemistry of medicine, and they had a long list of medical plants with the properties thereof, natural salts, and knew of the composition of various alkalies and sulphuric, nitric and muriatic acids. That Hippocrates derived assistance from the Hindus is evident; that he was a great traveler, is mentioned by Galen and Mercurial. In fact, the very names of the medicines used by the Greeks of the Hippocratic era showed their Oriental origin. The practice of the medical art by the Egyptians, at first undoubtedly connected with embalming, is certainly derived from Brahministic lore, and from them in turn it extended to Greece. The Greeks evidently regarded the Egyptians as the first instructors of mankind, notwithstanding they gave themselves due credit for improving and perfecting the knowledge derived from them. Plato says, that "whatever we Greeks receive from the barbarians we improve and perfect." In the Book of Genesis we read that Joseph commanded the *physicians* in his service to embalm the body of his father," which they executed according to the order in the space of forty days.

I referred a few moments ago to the fact that the Ayur-veda, from which the Charaka and Susruta were compiled, were believed to be of divine origin, but we must remember that all ancient countries had faith in the divine origin of the medical art. "The art of medicine," said Cicero, "has been consecrated by the invention of the immortal gods," and we find in the works of Galen a statement that the Greeks attribute the invention of the art to the sons of the gods, who had been instructed by the gods themselves.

The first Egyptian author is said to be Hamon, who was believed to be Hamon the First, of the first Egyptian dynasty. Zoroaster was the next. Pliny, on the authority of Aristotle, says that Zoroaster lived six thousand years before Plato. After Zoroaster came Thot or Thouth, whom the Greeks placed among the gods and named Hermes, and the Latins Mercurius, and who is the same, according to some authors, as Shem, the son of Noah. Thot, or Taautus as he was sometimes called, was allowed to be one of the counsellors of Saturn, and M. Bouchart has endeavored to prove that Chronos or Saturn was the same as the Jewish Noah. But however uncertain the ancient chroniclers may be on this subject, they agree that Hermes or Mercurius was the author of medicine among the Egyptians, a superstition which has been disproved by the fact that a knowledge of medicine existed, as has been already stated, for many centuries among the Hindus. But I have no desire to confuse you by passing into a discussion of Egyptian and Greek mythology whereby Osiris and Isis were said to have originated medicine, and that Mercury was nothing more than secretary to Osiris and Isis. Indeed, if we undertook to mention seriatim all of the ancient gods and goddesses to whom have been attributed the invention of medicine, the entire time of this lecture would be taken up on account of mythology rather than the profession of medicine. It is somewhat unfortunate that the ancient medical authors, such as Diodorus and others, following the customs of the time, attributed to various gods the introduction of various medicines. It is not astonishing that the poets, with that license which they have been allowed in all ages, should have done so, but the authors of scientific treatises seem also to have been overcome with the spirit of the time. It is probable that Æsculapius, whom the Greeks placed among the gods, was a real personage, although there were several of that name, and confusion might easily result. Cicero said that there were three Æsculapii, of which the first, he said (that one which the Archadeans worshipped) was the son of Apollo. This is the one who invented the probe to probe wounds and apply bandages. The second was the brother of the second Mercury, who was killed by Jupiter. The third was Arsippus, who invented purging and was the first to pull teeth. Neither shall we enter into speculation as to whether Machaon and Podalirus, the two sons of Æsculapius, were respectable physicians and surgeons, and whether Machaon was the older of the two brothers. It is certain, however, that Homer always mentions Podalirus first, nevertheless Machaon, who treated Menelaus, was the more esteemed.

Passing this heroic age we come to the age of Hippocrates, and here it is that the science of medicine became established as a science, and especially the everlasting principles upon which a knowledge of disease is founded, namely, on the observation of actual cases. Although it is not at all probable that the Greek temples were the first hospitals, yet it is to be remembered that in the Æsclepion Hippocrates on the Island of Cos examined the recorded observations of his predecessors and placed in enduring form his own immortal observations. There was reason why at this time the science of medicine should reach a high state of development in the latter part of the fifth century ante-Christus. This was one of the most remarkable epochs in the intellectual development of the human race. "The contemporaries of Hippocrates were Pericles, a famous statesman; Æschylus, the tragic poet, Sophocles, Euripides, Aristophanes, Pindar, the philosopher Socrates with

his distinguished disciples, Plato and Xenophen, the venerable father of history, Herodotus, and his young rival, Thucydides. In beautiful statuary, there was Phidias, with his illustrious pupils, and many other distinguished names who have conferred immortal honor on the age in which they lived and exalted the dignity of human nature." (Adams.) Both Strabo and Pliny assert that Hippocrates obtained the rudiments of his knowledge from the reports of cases collected in the Æsclepion of Cos.

I shall not at this time and before this audience attempt to give an eulogy of the life and character of Hippocrates, as that has been attested by all succeeding time, but his influence on medicine, it must be confessed, is unsurpassed, and it is admitted today by the best medical philosophers that medical practice at the close of the nineteenth century more closely approaches that of the Hippocratic period than at any previous time. Why, indeed, should not the practice of the art have its standard placed at the same time, as the standard of statuary and eloquence and poetry have been established? As no poet in modern times exceeds Homer, no sculptor of modern times surpasses Phidias; and as no orator of modern times surpasses Demosthenes or Pericles, so no physician of modern times surpasses Hippocrates in his deep knowledge of the philosophy and general principles of the understanding of the medical art. I admit, however, that I myself would rather be treated by one of our hospital internes of the present day than by the prescriptions of Hippocrates; but I speak of the principles which were developed by that great mind who wrote that magnificent series of aphorisms which commence, "Life is short, and the art is long; the occasion fleeting; experience fallacious, and judgment difficult."

The physician of the time of Hippocrates treated his patients on the field of battle, but mostly in hospitals; all chronic diseases were carried to the hospital, and this custom was not abolished until in the time of Augustus, when by a decree, the Greek physicians were made slaves and subject to the caprices and whims of their masters.

We may trace the first education of physicians from the earliest times in a direct line from the Hippocratic temples to the school of Alexandria, and thence to Italy; and under the bright skies of Greece, Asia Minor, Alexandria, and Southern Italy, learning was greatly encouraged and wisdom much increased; but the tyranny of the Romans became fatal to further advancement, and it is seen that absolutely no progress in medical science was made from the time of Galen in the second century down to the medical schools of Salernum in the eleventh, Padua and Bologna in the twelfth, and Montpelier in the thirteenth centuries. The greatest latitude was given to the study of anatomy at the old Alexandrian school under the wise reign of the Ptolemies. Erasistratus, who had dissected animals almost without number for the purpose of establishing his anatomic discoveries, was finally given direction by Ptolemy-Soter to dissect the bodies of living criminals condemned to death, and it is said that over two thousand were dissected under this rule by him and his coadjutors. This was barbarous, but it established certain truths. It was the foundation of the true science of anatomy as at present understood, and the nomenclature given at that time still exists. The science has progressed; the world has generally progressed in wisdom from that until this time; but there always have been obstructionists, that we are not exempt from the general rule is evident when we see grave and reverend gentlemen straining every effort to prevent the march of science and arrest its development by the stopping of experimentations on guinea pigs or white mice. History will again repeat itself. If the law of our country put its strong hand to stop the physiologic laboratory, to stop experimentation, to stop further progress, what our more ancient brethren in Rome experienced when their scientific studies were stopped and themselves made slaves, mere body servants, will be repeated if the proper members of the profession shall not be allowed to prosecute those needful investigations even at the expense of some of the lower animals and reptilians.

To return, however, to our theme, the profession of medicine was practically suppressed during the long period from the second to the twelfth centuries, a knowledge of the subject being confined to the cloisters, and the priests themselves scarcely daring to exercise it except as a part of religious ceremony in their clerical ministrations. The establishment of the universities in Southern Italy, followed by those of Padua, Bologna and Montpelier, inaugurated a new era, but it may be truly said, however, that it was not until the middle of the fifteenth century that a real revival took place, and even then physicians were not recognized as such for a considerable period. A practitioner of the art was either a specialist devoting himself to cures of hernia, or cutting for stone, or else he was a priest and used the medical art as an adjunct to his office, or a barber-surgeon, and as such obliged *nolens volens* to accompany armies in the field. Nor has there been at any time since, a single period when it may be said that the profession of medicine has jumped at a single bound into distinction and a clearly defined position. On the contrary, its growth has been gradual and its recognition likewise gradual. The great discovery by Harvey of the circulation of the blood; the discovery of the use of the microscope; the increase of knowledge of the operations of the organs of the body; the increased knowledge brought about by geographical discoveries and bringing into view certain herbs and chemicals; the discovery of the laws of generation, of animal life; the discovery of the science of bacteriology, or rather its completion, for it too, has come about by degrees, have each, as they have come to the knowledge of the laity, served to place medicine on a firm and enduring basis as a distinct profession.

Quacks have existed from time immemorial; sects have sprung up from time to time, but there have ever remained solid truths, unshaken by the waves of popular clamor, unchanged by the lapse of time, and this has served to maintain a system of medicine practically unbroken from the Hippocratic age down to the present time. Of the quacks that have flourished, there needs little to be said. Some of the most monstrous propositions have been eagerly swallowed by a public ever thirsting for novelty and sensation; and when one has served its turn as a confidence scheme, it is soon succeeded by some other. The same may be said about the sects in medicine which are based on one idea. Each may have some isolated fact as its underlying basis, but having no connection with the broad science itself and therefore generally useless.

I may refer, first of all, to a new sect denominated

Christian Science, which I believe to be unchristian because it is not humanitarian; nor is it scientific, because it is opposed to the known laws of nature. It has an isolated fact, which is the power of mental influence over disease. It is well known that by hypnotism or mental influence we may exert sometimes a salutary, sometimes a harmful effect on a human mind throughout the body, whereby changes more or less permanent in character may occur. That it may do so in those cases where a delicate balance exists between life and death is extremely doubtful. In the presence of those poisonous agencies which destroy life, such as the venom from reptiles, vegetable poisons such as strychnia, animal bacteria such as from malignant diphtheria, we know that no mental effect whatever can be of sufficient force to arrest the fatal process by which life is destroyed. So then in elevating such a sect to the system of medicine we are committing even a greater folly than our predecessors did when they attempted the apotheosis of Hahnemann and his pellets, or "dilute moonshine," as Oliver Wendell Holmes was wont to call them. I do not appeal here to prejudice, but simply to reason and common sense. It is a fact that the more a substance is diluted the weaker it becomes, the Hahnemannic teachings to the contrary, notwithstanding. If it were otherwise, you had as well shut your eyes to all that occurs in the chemic laboratory; as well admit that an alkali is an acid, or say that no new compound would result on placing a basic metal in contact with an acid.

The newest fad of all, without that connection which enables it to be called a science, is the doctrine called osteopathy. It teaches in brief, according to what I have read concerning it, that all diseases originate in the bones. So far as osteopathy is concerned, the liver is a myth, the gall bladder a toy balloon and the existence of the heart itself a fiction. All known facts in physiology are of no use to the modern practitioner of the art of osteopathy, for by manipulation of the bones and joints he can cure all ills and remedy all diseases to which human flesh is heir. The little morsel of fact contained in this doctrine is that relating to muscular movement, stimulation of the circulation of the skin; in a word, *massage*, a well-known remedy handed down by the ancients from the earliest times. A single remedy, a single method may be adapted for certain affections; may be admirably suited for certain conditions of the body and should be used under appropriate conditions. So, some of the followers of this sect have begun to formulate rules, imbued with the belief that it is the one idea alone which constitutes the sum total of medical science, and its followers have petitioned the legislature of this State to be excluded from the laws governing other practitioners in medicine and surgery, that they may escape that examination which all other practitioners of medicine, including the sectarians, are obliged to submit. I say it in all kindness, I speak it in all sincerity, when I say in this presence and before these young men here assembled, that we should never recognize any sect in medicine as a distinct and separate branch that refuses to accept the established facts governing the generation, the growth, development and life of the human body. Our idea of life itself involves an idea of change. The juices that flow in plants, the blood that courses through our veins, the fluids in the lymph spaces and lymph channels, all these must circulate, all these must change, or else the plant or body becomes dead and sinks into decay. A knowledge of the forces governing these changes, the laws by which the fluids themselves are formed, the process by which the tissues are regenerated and changed must be known, must be understood, and that knowledge is essential in the understanding of disease. "How can anyone," says Celsus in the second century, "cure a disease when he knows not its cause." "He who understands the cause of disease is best able to cure it." If this statement was true in the time of Celsus, it is true at the close of the nineteenth century and the principle is the same.

Specialism in medicine.—I would not have you understand that anything which I have said in relation to sects in medicine applies in any degree to the practice of well recognized specialists. It is understood that the field of medical science is now so broad, so vast, that no one person can grasp it in its entirety and keep in perfect touch with the advancing knowledge of the time in these several departments; and so in our days the specialist has sprung up again, although it must be remembered, that in the brighter days of the ancients, in the days of the Alexandrian school, specialism had developed to an unprecedented extent, and to a degree which worked its own self-destruction. A man in those days had to have about thirty physicians, one for each class of ailments from which he might suppose himself to be suffering. That was specialism run mad. In our day we may say that there are a few defined and distinct specialties having a legitimate right to exist. It is, however, a fact that the specialists are those who have devoted a period of years (say five or six as the minimum period) to general practice, as without the knowledge which comes from experience the specialist is apt to fall into error. He will examine some particular symptom, but in the range of his specialty he will forget all about the man himself. It is, as a politician once said, that he knew a man whose vision was so acute that he could see a fly upon the barn door but could not see the barn door itself.

Seriously, in order to make a perfect specialist one must be able to make a diagnosis of any of the diseases of the body. Having a knowledge of the whole, he can give each symptom its due weight, and then with the special knowledge which he possesses as to the treatment of the particular organ under observation he will accomplish the most satisfactory results. It is demoralising for a young man to take up a specialty immediately after leaving college. It makes him narrow and untrustworthy. The family practitioner, that is, the general practitioner, has a love and close friendship with his clientèle which, perhaps, while not altogether denied him, are still quite foreign to the specialist. The family consult a special practitioner because they are obliged to, whereas they often go to the family physician as they would go to a friend about matters perhaps which are only semi-professional, and the loss or absence of friendship—I mean close friendship—is a great loss to any man, and especially to a young man just making his start in the world.

Let me refer briefly to the status of the profession at the present day with regard to medical education. It is known to most of you no doubt that a great change has taken place in the last ten years. Ten years ago but a few of the medical colleges in this country required an examination as preliminary to the study of medicine. They trusted entirely to the

doctrine of the survival of the fittest, and expected that a man's success after leaving college depended entirely upon his industry, his energy, natural ability, not less than upon his special knowledge. This state of things no longer exists. All of the best schools in America require a preliminary entrance examination. Some of them extend this requirement to an examination equal to the requirements of admission to the sophomore year of the academic department of a literary school, and others have extended it to the junior year. At the same time there has been a lengthening of the courses of study until now from seven to eight months are required in most of the schools, and some of them have extended the course to nine months. All this extension means additional expense to the medical student; additional expense means the limiting of the numbers in the classes, so that the overgrown classes of a few years ago are not to be expected in the future until we begin to draw students from Europe. Besides that, the profession itself has been overcrowded until the opportunities for remunerative employment have become more and limited; hence the interest of the profession, not less than the scientific interest, required the raising of the standard. Not every man has the mental make-up, the courage, the industry and the peculiar temperament to make a successful physician, even if he is imbued with the high ideals I have set forth. On this point it would be well if our young men took some unprejudiced advice before engaging in a business for which they may find their entire inadaptability when it is too late and thus become professional misfits. Tact, gentleness of manner and amiability of temper with just enough firmness of purpose are characteristics of the successful physician and these seldom come to a man in full measure unless natural to him. They can not be acquired and suddenly put on as one would put on a new suit of clothes. These characteristics must be part of the man himself and a careful study of the character of the many successful physicians shows it. When a young man is found corresponding with this ideal he should be encouraged to study medicine.

But what will become of the physician in the country, away from the larger towns and villages? It is easily seen that his preliminary and regular medical education will cost a vast sum, let us say a thousand dollars a year at a moderate estimate. If now we add to the cost of the collegiate education four thousand dollars, we will see that even at a moderate rate of interest the capital invested will not justify a man in studying for practice in a place where his income will be limited, so that if one enters the profession from this time on, it must be with the distinct understanding that he enters it for his own sake, and not for the sake of pecuniary reward or profit, as the same amount of capital otherwise invested would bring much greater returns. It is natural, then, that we shall expect the physician of the future to be farther removed from the commercial elements which enter into his choice of a profession; that he will be more spirituelle, actuated perhaps by a higher sense of humanity, although it must be said in favor of our profession that, as a rule, they have always been actuated, in the past, by the highest regard for their profession. In fact this sentiment has come to be an abuse, has grown to such a degree that other ranks of society are becoming pauperized. I refer particularly to the so-called dispensary evil.

The dispensaries were originally founded for the benefit of the suffering poor, a worthy charity. To-day they are being utilized by not only the suffering poor, who are entitled to them, but by the avaricious and greedy and persons whose pecuniary circumstances in no wise render it necessary for them to seek gratuitous advice, and a reaction is now coming on which will certainly lead to the limitation of these abuses, if it does not go further. In one State the aid of the law is sought to be invoked to prevent persons who are not entitled to the benefits of public charity from receiving it. No other profession is called upon for so much gratuitous service to the poor as the medical profession, and as a rule the service is given cheerfully and promptly. I would like the laity to pause for a moment and ask themselves if they know a single profession whose members regularly and persistently from week to week, give their services gratuitously to hospitals and dispensaries, or to institutions of a similar character. As a rule, the doctor in any community is fully abreast, in general information, with the best citizens of that community, and in America he has no reason, at the present time, to complain of his social status. So far as worldly goods are concerned, any practitioner of ordinary ability may be able to live respectably and attain a moderate income. He must never expect to be rich. The rich practitioners as a rule are those who have become so by fortunate marriage relations or lucky investments. Few of them have become rich from incomes derived from their practice. There are many who have acquired a moderate competence, and there are some exceptions to the general rule. This may seem an unpoetic view of the situation, but it is the truth. I had rather picture to you a doctor passing out among the people on his rounds with a shining, smiling face, beloved of everybody, respected of everybody, the admired of a few and the companion of the wealthy, but truth in this manner is inelastic; it is inexorable.

Even a physician in the public service does not receive the same credit as his brother officers in the line. Although the records show that the mortality in the medical department is as great as that in any other branches of the service, and it is known that more men are destroyed by climatic diseases in time of war than are destroyed by the bullets of the enemy, and that the most important means of preserving the strength of the command is to preserve the health of the troops engaged; yet the medical man, not being responsible for any of the miliary movements, can have attached to himself but a modicum of that military halo which surrounds the officer of the line. This is inherent to his profession, and as it is a true statement it may as well be recognized in making up your minds to enter this branch of the profession.

We have eccentric characters in our profession, and perhaps more than our share of them, but it is scarcely fair to gauge the entire profession by the Sangrados of La Sage, the characters of Molière, or the Abernethys of real life. Our profession is not exempt from a few wolves in sheep's clothing, who are treacherous and tyrannical, unkind to their fellows and assassins of character, but these are exceptional and I believe we have less than our proportion of them as the professions go, but my earnest desire is to see the time when only those study medicine who have *natural* fitness for its practice.

In this cursory view which I have given of the medical profession as it was and as it is, I have kept

away from entering too far certain by-paths which, however pleasant and amusing, are less instructive. I have given you these views as being appropriate truths to spread before any gentleman about to enter the world with the choice of a profession yet before them, and to reiterate the words of old Burton, as true today as when they were written over two hundred years ago, that among the professions "the clergy has the most honor, physicians the most learning and lawyers the most money." I might add, and I think it will be admitted, that of the three professions, that of the physician is the most laborious and the most exacting. If, then, with these facts before you, you choose to become medical pupils and enter the temple devoted to medical science with a view of giving your life to it, let it be understood that you are entering it from pure love of science, for love of humanity, and for the effects upon yourselves of a life of self-abnegation. You may forego visions of wealth and cease to dream of political power or prominence, for these seldom come to the practitioner of medicine. Indeed, in the metropolis of this country at the present day there is a law on the statute books excluding a physician from occupying the position of president of the board of health, the very place one would think a practitioner of medicine would be most useful and perform the greatest service. Let the medical man be content within his appropriate sphere to devote himself to that proper study of mankind, which is man made in the image of his Creator, and you will have the knowledge that although your life may be well spent, characterized all your days by uprightness and virtue, yet the pomp and panoply of circumstance will never be accorded to you, and when you sink to rest, your bier may be surrounded by the weeping faces and falling tears of the poor whom you have aided in your lifetime, but the great bulk of mankind will pass on as if you had never existed. Perhaps this is true of men in general; but if the student be ambitious, it is well that he pause and reflect and face matters as they exist, rather than start out with too roseate visions of what life has in store for him. If he adopt the humble yet noble profession of medicine, he adopts a laborious profession. With all its disadvantages, if they are disadvantages, it may be said that the profession of medicine is eminently respectable; its practitioners rarely suffer from want; they are rarely compelled to beg for bread, and they are treated with reasonable respect by their fellows, for as few of them know how soon they will be called upon to require their services, that anticipatory gratitude born of a lively sense of favors to come is extended to the physician.

But there *are* pleasures connected with the physician's life; at times real happiness when a distinct triumph is made over the arch enemy of mankind—disease; and to increase these triumphs is the constant aim and life study of the physician.

Combined Ileus.—Hochenegg has observed four cases in which the occlusion was caused by several constrictions from adherences involving the small intestines complicating a cancerous stricture of the transverse colon. As the removal of one did not bring relief, the others were sought and found. In one case there was an ectopic testis; the patient recovered after the fourth operation. In all, the transverse colon was much thickened, while the rest of the walls of the large intestines were normal. In operating the obstruction in the small intestine must first be removed and colostomy established, proceeding later to the ablation of the carcinomatous tumor of the large intestine.—*Wien. Klin. Woch.*, December 23.

ORIGINAL ARTICLES.

THE DIAGNOSIS AND TREATMENT OF URETHRAL STRICTURE.

BY EVERT E. TRACY, M.D.
CHICAGO, ILL.

For convenience of classification, urethral strictures are considered as being of large, medium or small caliber; either plastic-exudative or fibrous in in character, and may at any time become spasmodic. Within the folds of the urethral mucous membrane at the point of stricture will generally be found gonococci, and sometimes at this point there will also be found one or more pockets of pus, which, when situated in the deep urethra, may cause chronic prostatorrhea, or prostatic abscess.

A stricture of large caliber may be defined as any size larger than 29 F. situated either in the deep or pendulous portion of the urethra. This form of stricture will often be overlooked, from the fact that the urethra seems to be of normal caliber, the act of urination being performed without difficulty, and the presence of a stricture only suspected from the slight discharge of glairy mucus observed by the patient, principally in the morning, though sometimes during the day, and often accompanied by pain in the lumbar region, for which he seeks medical aid.

By examination with sounds, in such cases, it will be found that they are passed with but little difficulty until about 28 or 29 F. is reached, when a distinct resistance will be felt, which is caused by contact with the stricture, after the passing of which and upon withdrawal of the sound a few drops of pus or mucus will follow; and upon microscopic examination these will often be found to contain gonococci. The same symptoms which accompany stricture of large are also found in stricture of medium and small caliber, although more pronounced.

Upon examination with the endoscope, which I always make without the use of a local anesthetic (as cocain causes discoloration of the membrane so that the examination is unsatisfactory. I prefer glycerin as a lubricant, as any other substance will obstruct the view so that a perfect picture can not be had). The mucous membrane of the urethra will appear about normal until the point of stricture is reached, when a decided difference in its appearance will be observed. The mucous membrane is now found to be very red or granular at the point of obstruction, showing a plastic exudative secreting pus (plastic-exudative stricture), or thence fibrous bands secreting mucus (organic stricture).

By means of the sound and endoscope any abnormality of the urethra can be detected.

I have always considered Otis' metallic bulbous bougies excellent for locating a stricture, as they can always be rendered sterile.

I never use the ordinary flexible linen boule, as it is impossible to render it aseptic. All other diagnostic instruments are only auxiliary to the sound and endoscope, as with the sound, if properly passed and manipulated, the slightest resistance can be felt and the stricture located as easily in the membranous as in the pendulous portion of the canal, and then by the endoscope the diagnosis can be confirmed, as to the character of the stricture, whether simple plastic-exudative or fibrous organic.

After having made a diagnosis as to the size and

character of a stricture it is easy to decide on a plan of treatment. From a pathologic standpoint, stricture varies. It begins as a thickening of the mucous membrane with a deposit of plastic exudate on the deep connective tissue; later, it develops into a fibrous mass which occupies the submucous tissue and extends into the underlying tissue beyond, thereby becoming the dense fibrous organic stricture.

Some plan of treatment should be devised to cause absorption of this mass.

That form of stricture made up of plastic exudate, either of large, medium or small caliber, I divide into two stages: 1. That which easily yields to the sound and secretes a small amount of pus or blood, when the sound is withdrawn, may be considered the first stage of plastic-exudative stricture. 2. The more organized this plastic material becomes the greater is the sensation of resistance to the sound, and as this material is becoming partially organized, instead of clear pus following the withdrawal of the sound there will be pus mixed with mucus, or clear mucus, in which the gonococci will invariably be found. The same may be called the second stage of plastic-exudative stricture.

In several cases at this stage of the disease, I have found, after introducing a sound and breaking through this formation, that from fifteen to thirty drops of pus followed its withdrawal. When this form of stricture is located in the membranous portion of the urethra the gonococci which lie in the submucous tissue just behind the stricture easily find their way into the prostate, setting up a chronic prostatorrhea or prostatic abscess. In these cases, by introducing the sound into the urethra and making thorough digital examination of the prostate by the rectum, the size and hardness of the prostate can be felt and mapped out, and any fluctuations easily perceived, if pus be present. The prostate lying between the finger and sound can be firmly compressed, and any pus or mucus contained in the ducts of this organ forced out.

Organic stricture of any size, when examined by the sound gives a distinct sensation, to the touch, of dense unyielding resistance. In this form of stricture, after having passed the largest sound which the stricture will admit, it will be found that the next size will meet with a distinct resistance and can not be passed without a great amount of force, which should never be employed.

In the last few years I have adopted a special line of treatment for stricture, especially the plastic exudative. After having located the stricture, and decided as to its character, the urethra is anesthetized with a 20 per cent. solution of cocain containing 5 per cent. of carbolic acid. The object of adding the acid is, 1, to preserve the solution of cocain, and prevent its decomposition by standing, and this is effected so thoroughly that a solution six months old is fully as efficient as a solution freshly made; 2, to further asepticize the proposed point of operation; 3, the acid is a local anesthetic and its addition thus intensifies and prolongs the anesthetic effect; 4, the addition of the acid seems to assist in limiting the local anesthetic action of the cocain, in other words, it diminishes the systemic effect.

The solution is applied directly to the mucous membrane in the following manner: A probe about five inches long and thoroughly roughened is tightly wrapped with cotton for about two inches and is then saturated with cocain carbolic solution, but care must be taken that no excess is allowed to remain. An endoscope is then introduced to or a little beyond the point to be anesthetized. The cocain carbolic probe is then introduced through the endoscope and held in position, while the endoscope is removed. It is allowed to remain for ten or fifteen minutes, when it is removed by turning to the right as the probe is withdrawn, that is, it is turned in a direction to wind the cotton tighter. If this method be followed and the end of the probe be sufficiently rough, there will no danger in losing the cotton. In this way anesthesia will be produced which will last a sufficient length of time to allow any ordinary urethral operation.

Under this form of urethral anesthesia a complete examination can be made with the sound, or any other instrument necessary for diagnosis, or a complete internal urethrotomy performed without giving any pain to the patient. In the use of this method, regardless of the strong percentage of cocain introduced into the urethra, I have never had any bad results.

However, knowing the susceptibility of some patients to cocain, it is always well to watch the pulse for any untoward effects. The good results obtained in the use of this method should certainly give it a standing far above the old method of injection, which is not only dangerous but does not always give complete anesthesia.

Allowing that five drops of this solution be used, which would contain one grain of cocain, at least one-half of this amount would remain in the meshes of the cotton. Of the remainder, but one-half could possibly be absorbed in the system, which would be but one-quarter grain.

In the treatment of plastic structure of the first and second stages, I have confined myself to the sound and urethral irrigations with hot water. The patient is supplied with a No. 8 F. soft rubber catheter, in a 5 per cent. solution of carbolic acid, and after instructing him in the aseptic method of using hot irrigations, he is directed to take one irrigation morning and night.

Every two days, sounds should be passed at the physician's office, beginning with two sizes F. smaller than the stricture and carrying them if possible one size above the stricture. When the sound is in the urethra external massage is made over the diseased portion. If after sounding there is a discharge of pus, particularly if it contains gonococci, an injection should be used of 1 to 5 per cent. nitrate of silver.

When stricture is situated deep down in the membranous portion, I not only employ deep irrigations, injections and sounding, but also massage of the prostate by rectum, either with or without the sound in the urethra, in order to force out any mucus or pus liable to collect there.

After this treatment has been carried out for some time a decided improvement will result, and after a few months the patient will be discharged with a normal urethra.

In old organic strictures, however, this line of treatment will not produce such good results, unless carried out for a long time, and even then an internal urethrotomy is often necessary.

Internal urethrotomy simply converts a circular into a linear stricture, and although it gives the urethra a normal caliber, the stricture still remains in

another form, and the normal columnar is changed into pavement epithelium; for this reason this operation should never be performed until other means have failed.

In that form of tight stricture in which we are not able to pass even the smallest sound and the stricture can only be passed by a filiform bougie, I have had good results by the method advocated by Sir Henry Thompson, namely, passing a filiform bougie and allowing it to remain until by its constant presence, pressure atrophy is produced, whereupon a large instrument, a gum elastic bougie, can be introduced. In one case of the kind, by the use of this method I was finally able to introduce a number 16 F., after which by gradual dilatation and hot irrigations I gave the patient a healthy urethra.

In any form of stricture this method of treatment has always given good results. The less organized the exudate the more easy it will yield to treatment, and even in the dense fibrous form of stricture, if the treatment be continued long enough, a healthy urethra can often be obtained without internal urethrotomy.

82 Maple Street.

REPORT OF CASES OF TUBERCULOSIS TREATED WITH ANTIPHTHISIC SERUM T.R. (FISCH).

BY F. E. WAXHAM, M.D.

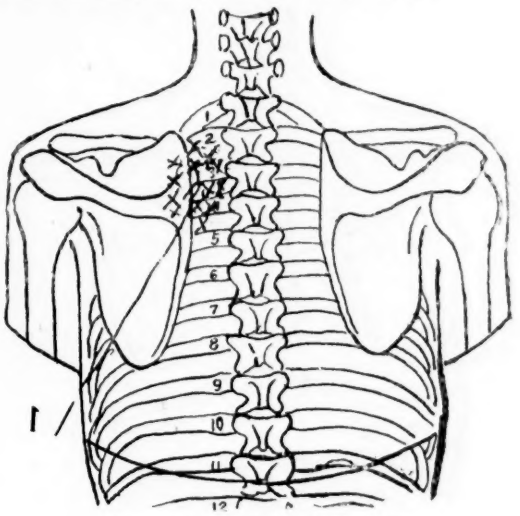
DENVER, COLO.

The attention of the profession having been quite generally called, of late, to the serum treatment of tuberculosis and some rather glowing reports having been made I desire to add my conclusions, drawn from a limited number of cases. Through the courtesy of the John T. Milliken Co., I was early provided with their antiphthisic serum T.R. (Fisch), which has been described in previous papers published in the JOURNAL. I confess to have entered upon the treatment of tuberculosis with this serum with much confidence. The great value of antitoxin in the treatment of diphtheria inspired the hope that a serum for tuberculosis would prove equally effective. How well this confidence was placed must be judged from the following cases:

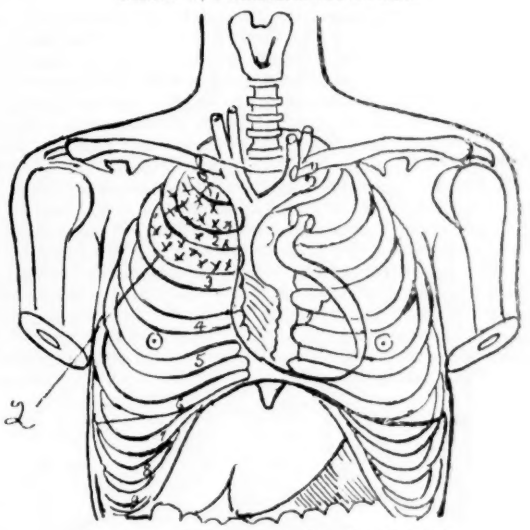
Cass 1.—C. E. M., aged 40, first consulted me Oct. 26, 1895, and gave the following history: He had la grippe in 1894, after which his cough, which had troubled him somewhat, became much worse. Tuberculosis of upper portion of right lung was discovered in June following, and bacilli at that time were present in the sputum. He was at once sent to Colorado, where he arrived June 29. At the date of his visit to me his cough was dry, harsh and frequent, with very little expectoration; voice husky. Upon examination tubercular infiltration was found in the upper part of the right lung anteriorly, and slight infiltration of left lung posteriorly. There was tubercular thickening and slight ulceration of right side of the larynx involving right vocal band. Under lactic acid treatment and climatic influence the tubercular laryngitis improved and the slight ulceration healed.

Nov. 17, 1897, he again consulted me for examination and treatment. At this date there is tubercular infiltration (fibroid) in right lung as low as third rib; also considerable fibroid degeneration in left lung. Cough dry, harsh and troublesome, with but little expectoration. Bacilli present in sputum, which is very small in quantity; voice husky. Weight 131 pounds, which is 17 pounds less than one year ago.

Treatment and results.—He was placed upon antiphthisic serum T.R. and for five weeks was given daily injections. Commencing with ½ c.c. it was gradually increased to the full dose. About four days after commencing treatment he suffered from a serum eruption upon the back about the points of injection, which caused much annoyance from the itching which it produced. This however lasted but a few days. For some days he seemed brighter and stronger and, as he expressed it, "had more nerve," but at the end of five weeks daily treatment his appetite had entirely disappeared, he had lost decidedly in weight, was nervous and despondent, could not sleep at night and his cough was much more frequent and troublesome. I had no opportunity of examining his sputum as he left suddenly, hoping that a change of scene and climate might help him. The result of the treatment was highly unsatisfactory. The patient steadily lost ground in every respect.

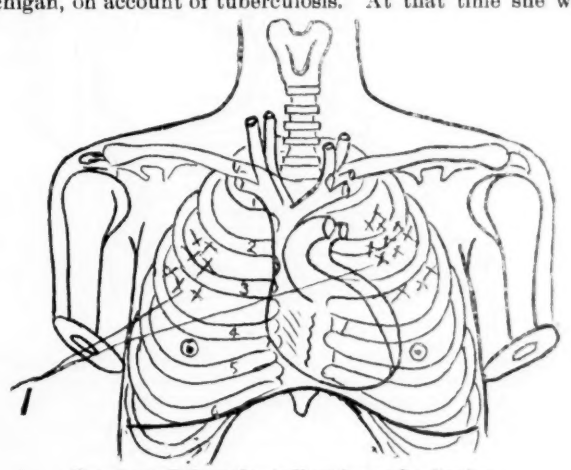


Case 1.—1, Tubercular infiltration.



Case 1.—2, Tubercular infiltration (fibroid).

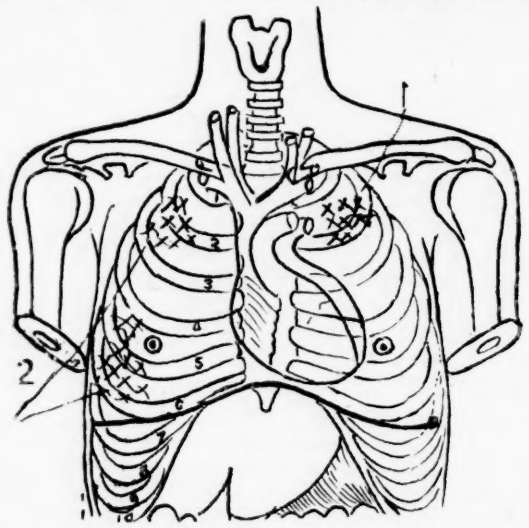
Case 2.—Miss C. age 27, consulted me Nov. 20, 1897, giving the following history. She came to Colorado two years ago from Michigan, on account of tuberculosis. At that time she was coughing badly and had lost ten pounds in weight. She rap-



Case 2.—1, Tubercular infiltration and softening.

idly improved after coming here and believed that she had fully recovered. The last few weeks however she has been coughing and expectorating much and losing rapidly in weight. Bacilli are present in the sputum.

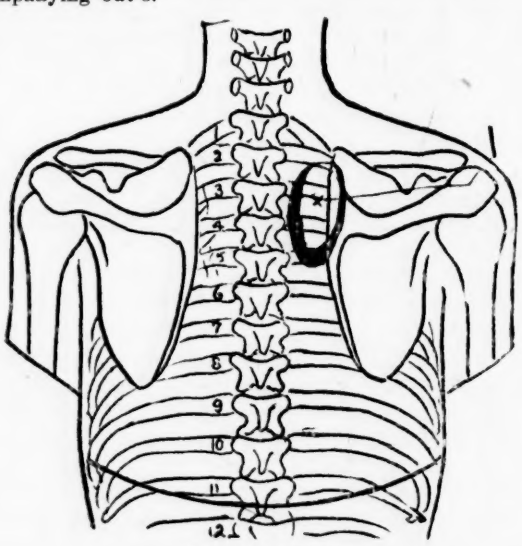
Treatment and results.—She was placed upon antiseptic serum T.R., commencing with moderate doses and gradually increasing the amount. For two months the remedy was given daily, during which time the cough and expectoration increased;



Case 3.—1, Old cavity; 2, Tubercular infiltration with harsh respiration.

the strength rapidly failed; chills and fever developed and appetite failed. After two months the treatment was abandoned and the following entry is found in the record book. "After two months daily treatment the patient is much worse. She now weighs but 121 pounds having lost 6 pounds during this time. The cough and expectoration is much worse. Appetite is poor. Sweats at night. Pulse rapid and feeble. Has an occasional chill followed by high fever. Bacilli are present in sputum. Physical condition is much worse in every way."

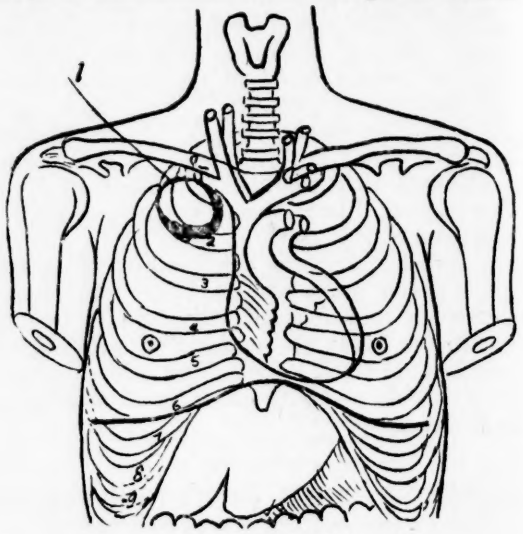
Case 3.—Miss E. O. S. age 27, consulted me Dec. 1, 1897, giving the following history. She has had a cough for eight years and came to Colorado four years ago. She has been failing for the past two months; looks emaciated, and coughs and raises much. The sputum is heavy and bacilli are abundant. At present there is no fever, no chills, no sweats, appetite is fair. She is losing in weight and strength, and suffers much dyspnea upon exercising. Condition of lungs as represented in accompanying cut 3.



Case 4.—1, Cavity.

Treatment and results.—Antiphthisic serum T.R. was given regularly and daily for two months together with heart tonics, inhalations of compressed air and greatly increased nourishment. Condition at the end of two months as follows: Dyspnea not as great; sleeps better; appetite somewhat improved and cough not so bad. She still raises much heavy sputum in which the bacilli are as numerous as at the beginning of treatment. The condition of the lungs remains unchanged. She has however gained four pounds in weight. Later: At the end of three months' treatment the patient has failed decidedly. The cough and expectoration much worse, much loss of strength and weight.

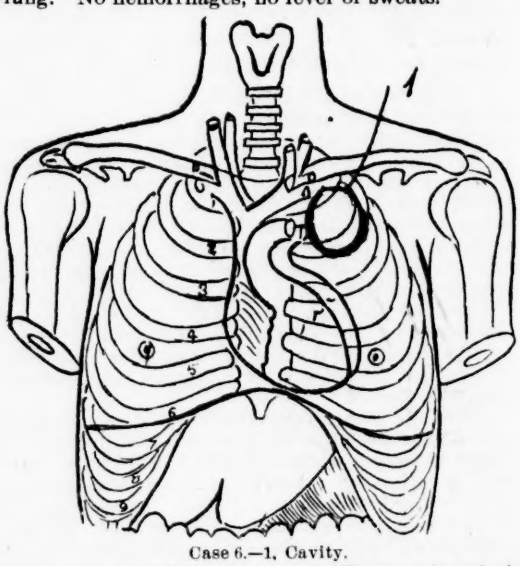
Case 4.—Age 42, came to Colorado five and a half years ago, with well developed tuberculosis and in very feeble health. Patient improved decidedly under climatic influence and general treatment and remained in fair strength and health until



Case 5.—1, Cavity.

two months since. Of late has been losing ground, coughing more and losing in weight and strength. Examination reveals a large cavity in right lung posteriorly. Jan. 20, 1898, she was given ½ c.c. antiphthisic serum which was repeated daily for four days. A diffuse serum eruption then occurred on the back causing much itching and discomfort, associated with severe pain through the lungs and in the limbs and attended with much prostration, from which the patient did not fully recuperate for several weeks. At the patients request the treatment was abandoned. Result of treatment decidedly bad.

Case 5.—P. D. G., age 40, consulted me December 6. He came to Colorado nine years ago on account of tuberculosis. He so fully recovered as a result of the change and climate that he soon engaged in active business, which he still pursues. The last few months he has been losing strength and weight and the cough has become very troublesome and expectoration has increased. Sputum contains bacilli. Cavity is present in upper right lung. No hemorrhages, no fever or sweats.

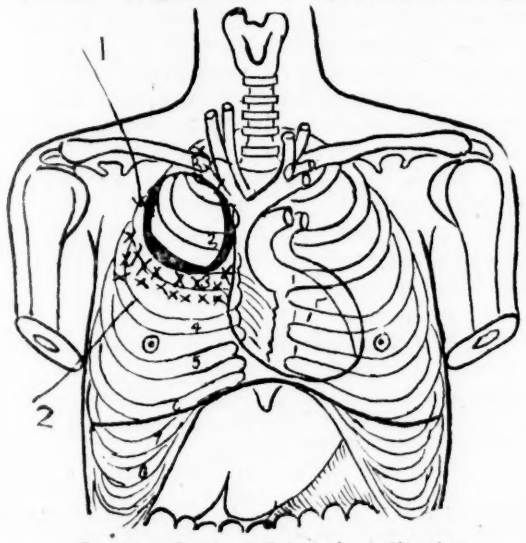


Case 6.—1, Cavity.

Treatment.—Antiphthisic serum T. R. was given in increasing doses daily, with inhalations of compressed air and increased nourishment. At the end of two and a half months no change is perceptible. Patient has not lost ground but the cough and expectoration still remain and bacilli are still present in the sputum. Antiphthisic serum is still continued in increasing doses. Later: Patient losing ground; has some fever, cough worse and strength much less.

Case 6.—J. M. C., age 35, came to me for examination and treatment December 28. He gives the history of hemorrhages twelve and eight years ago. He came to Colorado eleven years since: improved rapidly and did well for seven years, when he removed to Pasadena, Cal. Here he remained for three and a half years, but his health again failing he was obliged to return to Colorado. He is now coughing and expectorating freely. Bacilli are present in the sputum, which is heavy and often colored slightly with blood. Cavity in upper left lung. No chills, fever or sweats. Has of late lost seven pounds.

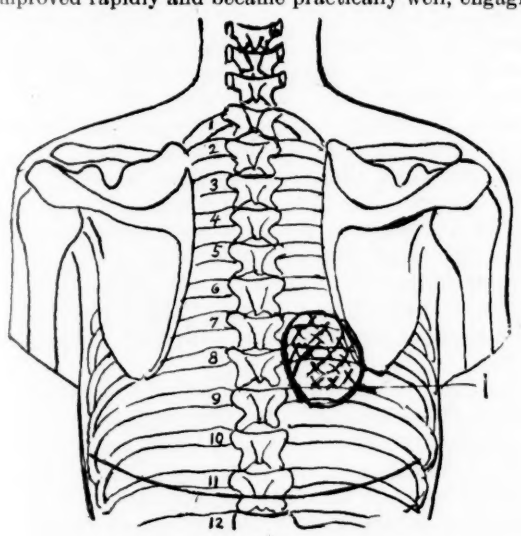
Treatment and result.—Antiphthisic serum T. R. was given daily, increased gradually to full doses, and in addition inhalations of compressed air, careful exercise and full diet. Within two weeks he began to show improvement. Appetite and general vigor improved and at the end of six weeks he had gained seven pounds. Cough is better, expectoration not quite so



Case 7.—1, Cavity; 2, Tubercular infiltration.

copious but still heavy and containing bacilli although apparently not quite so numerous as before treatment. Treatment continued. Later: The patient has had a suppurative inflammation of the right middle ear. Cough and expectoration worse again.

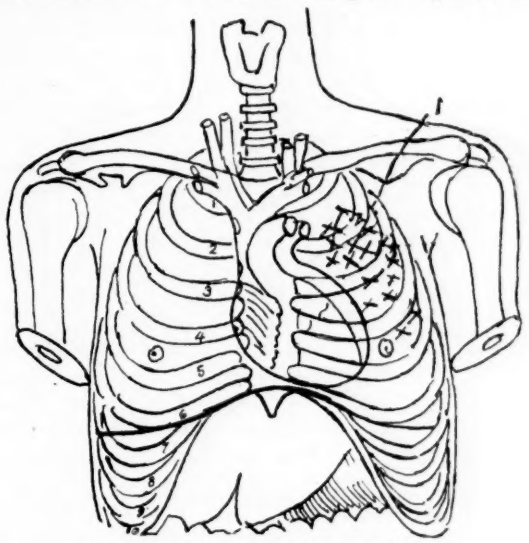
Case 7.—I was called December 15 to see M. T., who gave the following history: He came to Colorado ten years ago a very sick man, having had frequent hemorrhages while in the East. He improved rapidly and became practically well, engaging in



Case 8.—1, Area of consolidation.

active and arduous business. Eight months since he began to fail. Business cares, anxiety and overwork began to have their effect. During the summer of 1897 he had quite a free hemorrhage, followed by hectic fever, and was confined to bed for a number of weeks, during which time he lost twenty pounds. By careful treatment, greatly improved environment and rest from business cares he improved and gained fifteen pounds. At the date of consultation he had again had a hemorrhage and, although not severe, he was confined to the bed and seemed very weak. Upon examination, a very large cavity was found in the upper right lung, with considerable tubercular infiltration all about it. There was much dyspnea upon exertion and the heart's action was rapid and weak. Bacilli present in sputum.

Treatment—He was given strophanthus, strychnia and antiphthisic serum T. R. The latter was given regularly for two

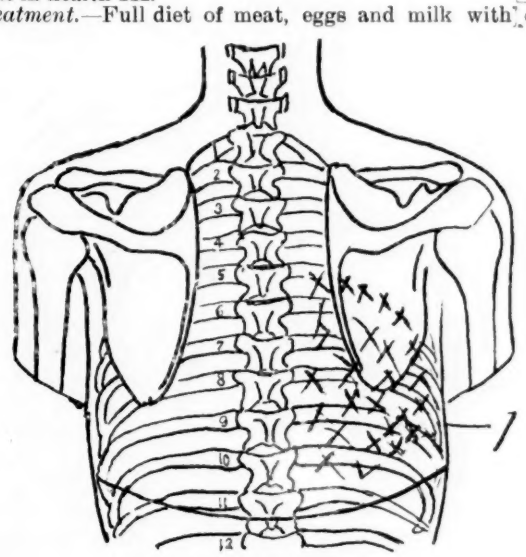


Case 8.—1, Tubercular infiltration (fibroid).

months in full and daily doses. The patient gradually improved, gaining five pounds, the dyspnea became much less and the appetite, vigor and strength also improved. At the end of two months, however, another slight hemorrhage occurred and examination of the sputum showed immense numbers of bacilli. Treatment continued.

Case 8.—Mrs. E. W. S. came to me Jan. 12, 1898. Had a slight hemorrhage three years ago. She then came to Colorado, where she improved and remained in good health until four weeks ago, when she was taken with a hemorrhage which confined her to bed for three weeks. Upon examination, find considerable disseminated tubercular infiltration (fibroid) in left lung, and an area of consolidation in lower right lung posteriorly. Cough dry with but little expectoration. No bacilli could be found in the sputum. Present weight 122 pounds; weight in health 142.

Treatment.—Full diet of meat, eggs and milk with daily

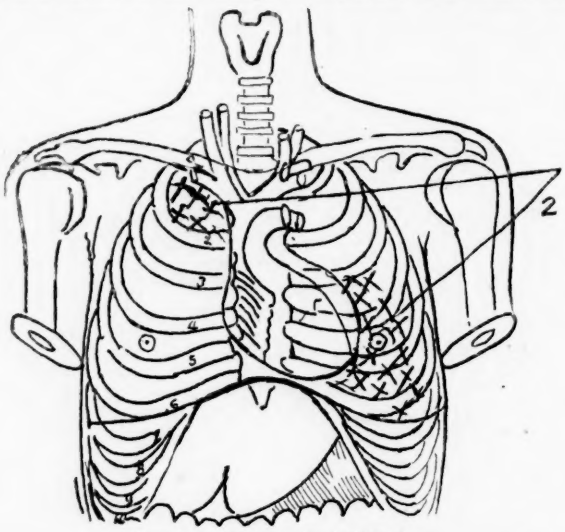


Case 9.—1, Tubercular infiltration.

injections of antiphthisic serum T. R. Under this treatment patient decidedly improved in spirit, vigor and strength, and in six weeks increased in weight eight pounds. Treatment continued.

Case 9.—C. P. M., age 34, came for examination and treatment Jan. 27, 1898. He has been coughing for one year, but was very well before that, with the exception of an attack of pleurisy three years ago. He came to Colorado December 7

and at that time had lost thirteen pounds. He is coughing much and expectorating heavy sputum. Bacilli present. Had night sweats before coming to Colorado. Heart's action is weak and rapid and there is much dyspnea upon slight exertion. Examination reveals tubercular infiltration in apex of right and lower lobe of left lung anteriorly and lower lobe of right posteriorly. For three weeks the patient did remarkably well as a result of the change to Colorado and under heart

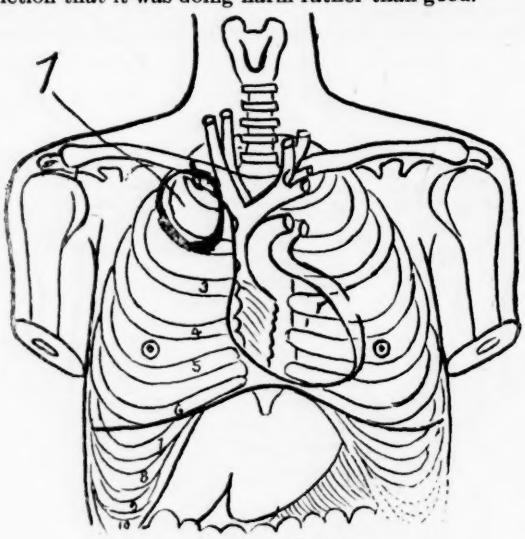


Case 9.—2, Tubercular infiltration.

tonics and increased nourishment. As improvement failed to continue, he was placed upon antiphthisic serum. After one month's treatment no improvement has been noted and no change in the condition of the lungs. Bacilli are even more numerous in the sputum than at the commencement of the treatment. Two weeks later: Has lost three pounds.

Case 10.—Mrs. M. C. came from Canada and arrived in Colorado in November, 1897. Has had chronic bronchitis for a number of years. Respiratory sounds harsh and rasping throughout both lungs. Cavity in apex of right lung. Bacilli are present in sputum. Much dyspnea on exercising.

Treatment.—Strychnia, strophanthus, increased nourishment and antiphthisic serum were given. After three weeks' daily treatment, under the most favorable circumstances, with steady failure, the serum treatment was discontinued with the conviction that it was doing harm rather than good.



Case 10.—1, Cavity.

CONCLUSIONS.

Number of cases treated, 10; cured, 0; improved, 3; worse, 7; bacilli present, 9; bacilli disappeared, 0.

In considering the value of any line of treatment in tuberculosis many factors must be considered. If the patients are pretubercular and the diagnosis is based upon the examination of the blood alone, rapid improvement should be expected from a change of climate and environment, and too much credit should not be claimed for any specific treatment. When patients with tuberculosis come to Colorado, unless too far advanced, they almost invariably improve and often remain in a fair degree of health for years, if they do not entirely recover. The cases reported would seem fair ones with which to judge the value of treatment. All were long standing cases and, with the exception of two cases which did poorly, all had been in Colorado from two to six years. We may therefore exclude any gain due to climatic influence. Judging from the above cases we may say that antiphthisic serum T.R. does not cure chronic cases of tuberculosis. It does not cause the disappearance of the bacilli. The psychologic effect of daily treatments however even in these cases inspires hope and courage that leads to temporary improvement. It is possible that in incipient cases antiphthisic serum may overcome the disease. If it can be proven to be effective in early cases, thus preventing the necessity of a change of climate, it will indeed be a blessing to mankind. Such proof must come from our eastern confrères, with the careful records of a large number of cases.

RESECTION AND REPRODUCTION OF THE MAXILLÆ.

Presented to the Section on Stomatology at the Forty-eighth Annual Meeting of the American Medical Association, held at Philadelphia, June 1–4, 1897.

BY G. LENOX CURTIS, M.D.

NEW YORK, N. Y.

FORMERLY PROFESSOR OF ORAL AND FACIAL SURGERY, NEW YORK DENTAL SCHOOL; AND INSTRUCTOR IN THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

The purpose of this paper is to show to the profession the importance of special study and instruction in oral and facial diseases, and that these are worthy of the same consideration as is given to any of the fully recognized specialties in medicine. Until they do appear in the curriculum of the medical school, the faculty will not have done its duty toward the student. The field covered by the general surgeon is too great for a careful consideration of any part where such minuteness is required to save and assist nature in doing her work. The surgeon most capable of successful teaching in this line is he who has been a thorough and conservative dentist.

Like produces like; this applies to every department in nature. The periosteum under favorable conditions will reproduce the substance it covered. That of the ramus of the jaw will only make the thin lamina of bone which nature has originally placed there, while that of the malar and the body of the jaw reproduces a dense structure differing materially in texture.

If the function of a part be permanently lost reproduction is not a necessity, nature supplying only that part which is required. If the teeth have been extracted, to remain out, the portion of the jaw which is required to nourish them is not reproduced, but where the teeth are replaced and retained all or sufficient of the bone is reproduced and reattaches them to the jaw. I have seen such in active use for years.

The only condition I can ascribe for the removal of the periosteum is where it is attacked by disease, such as cancer, and the entire structure destroyed. When the bone alone is destroyed, as in necrosis, cystic tumors, or from pressure by resistance of a growth, as tumor of the antrum, I see not the slightest necessity

for removing this natural sheath, but on the contrary every reason for retaining it. I have seen Billroth, Von Burgman, Agnew, Ashhurst, Garretson and other great surgeons resect the jaw, but they invariably employed Huyfelder's, Fergusson's or Langenbeck's method, except in cases of necrosis where but small sections were involved. Liston, Tait, Barton, Mütter and Gross also followed on these lines.

My method to obtain the best results in the preservation of the contour of the jaw is by retaining the necrosed bone in position until the periosteum has been so strengthened by the reproduction as to allow nature's outlines to be maintained, employing it as an interosseous splint. Where it is necessary to remove the bone I retain the contour of the face by gauze packing and change from time to time until the bone is sufficiently reproduced to resume its shape. This requires frequent dressing, so that the amount of pus may be kept at the minimum. The teeth are retained in position by means of interdental splints or ligatures. Where the teeth are lost I place other teeth in the opening when the wound is nearly closed, maintaining them by artificial support and allowing the bone to form around them. Where the destruction of the bone has been great and the periosteum too weak to retain the jaw in position during the process of reproduction I use an interdental splint (as employed by Liston over fifty years ago) in which the upper and lower teeth properly occlude. By hastening slowly the danger of wounding the dental nerve is materially lessened.

In 1886 I operated on a young woman, aged 23, with the following history. Four years previous, after suffering much pain in the face, which was swollen, a fistula appeared in the lower jaw and was diagnosed as being from an abscessed tooth. The gums around the tooth were swollen and inflamed; the molars and second bicuspid were extracted and the pus continued to flow. Her health rapidly diminished, menses ceased and had not returned, although constantly under medical and surgical treatment.

Examination revealed the emaciated condition of the patient. She was suffering from blood poisoning, was highly nervous and hysteric, had no desire for food and had lost the sympathy of her doctors and family. In the left inferior maxilla where the tooth had been extracted, there were granulations. A boggy condition of the mucous membrane extended all along that side of the jaw. Over the ramus it was particularly inflamed. The probe readily passed beneath the periosteum and far up along the ramus. The patient was then too sick for an operation, with a view to best results. The wound was cleansed daily to lessen the amount of pus, and for one month the patient was placed under most rigid restorative treatment with good results. I found that under the local stimulating treatment, bone had been sufficiently reproduced to strengthen the periosteum so that when I removed the dead jaw the contour was preserved. The cause of the trouble I found to be a wisdom tooth lying transversely at the neck of the jaw immediately under the condyle. This, along with the granulations and débris, was removed. The wound was packed continually until healthy granulations filled in the periosteum; the jaw, minus the teeth, was reproduced with all its usefulness. Complete restoration to health and a gain of twenty pounds in weight followed this work. The nerves and vessels in the jaw were not injured and no paralysis resulted.

Before my class at the New York Post-Graduate Medical School and Hospital, on March 25, 1893, I operated on a lad 15 years of age who gave the following history:

Three years before, while at play, he ran against a lamp post, striking the left side of his face and bruising it severely. A year later there appeared on the face, over the malar bone, a hard lump which continued to increase until it was the size of a hen's egg, preventing the boy from seeing, with that eye, objects on the ground near by without bending his head. He had not realized any special pain or discomfort from the tumor. Thinking the trouble arose from the abscessed teeth, his dentist extracted the upper, left, first bicuspid, which showed no evidence of being diseased. I diagnosed an osseous tumor of the antrum, and found that the malar and superior maxillary bones were completely destroyed by the direct pressure against them, only the periosteum remaining. Not only was the tumor directed outward, but downward, depressing the roof of the mouth and extending beyond the alveolar process against the buccinator muscle. An incision was made through the periosteum encircling the teeth, and only a small part of the alveolar process remained intact. This with the teeth was removed, the entire side of the face falling into the cavity made by their absence. so completely was the malar and the superior maxillary bones destroyed. The inferior orbital ridge and zygoma alone resisted the pressure of the tumor. A profuse hemorrhage followed its removal, but was readily checked by hot water. The wound was packed with aristol and gauze, and the contour of the face secured. The periosteum was united by sutures. Through this opening the wound was dressed until the shape of the face was permanently restored. Time of operation was twenty-five minutes.

The following day there was considerable edema which readily subsided. From day to day the dressing was changed until the periosteum could support itself, and in two weeks the case was discharged from the hospital. The antrum was douched daily until restoration was complete. An artificial denture was made to replace those lost, to give the normal fullness to the mouth. In this operation there was no external wound, consequently no necessity for ligature and no scarring of the face, which would necessarily follow had the operation been done on the lines drawn in general surgery. The wound completely healed in six weeks with no deformity of the face. I have seen the case from time to time and it is eminently satisfactory in every way.

On Feb. 3, 1893, I operated on a gentleman 73 years of age who, up to the year prior to that date, was in robust health, never needing a physician in forty years. He stated that he applied to a dentist to have the left superior wisdom tooth, which was loose, removed, it having elongated, owing to the loss of its antagonist. As the dentist was using the forceps, the patient noticed they were covered with blood, but before he could rebel against this outrage, a tooth had been extracted, which was found firmly attached and resistant. He saw that a sound and healthy tooth had been taken out by mistake. The dentist then removed the loose tooth with slight inconvenience. The wound made by the extraction of the teeth did not heal, the gums around it became swollen and inflamed and the remaining teeth on that side were soon loose and sore. In three weeks they were so troublesome that with his

fingers he removed the first molar. He then noticed an opening into the antrum and granulations protruding.

About two months after, the bicuspid was extracted in a similar manner, and in two weeks later the cuspid. The entire side of the jaw became very painful; the patient was unable to sleep or take proper nourishment and had rapidly diminished in strength and health, until at this time, February 3, he was extremely emaciated, not having taken solid food for weeks, and for the past three days only water, because of the great pain in the effort to swallow.

Examination revealed that the entire left half of the jaw and cheek was infiltrated. The microscope showed epithelioma. The characteristic cancerous odor prevailed. An incision was made anterior to the right cuspid and extended back and across the soft palate to the condyle, down the ramus, and forward along the buccal surface of the jaw to cuspid upward and forward until all the mucous membrane to the median line was removed. The entire enclosed area was then resected, leaving only the external portion of the malar bone and the orbital ridge of the superior maxillary in position.

In operating, I removed a portion of the anterior lobe of the parotid gland, along with the duct. The hemorrhage was profuse, but in a moment was completely checked by hot water. The wound was dried, packed with aristol and gauze, no ligatures being employed. Time of operation twenty minutes. The patient made a splendid recovery, slept comfortably much of that night and had but slight rise of temperature. There was some edema of the face, which lasted three days. Patient received most nourishing diet and was sitting up in three days. On the seventh day following the operation, the case was for the first time dressed, no untoward symptoms arising in the meantime. The packing was perfectly dried and scarcely blood-stained; not a drop of pus was present. The wound was repacked loosely, and redressed every third day without a single complication. February 17, the patient was discharged from the hospital with instruction to douche the wound frequently. The wound made rapid progress in healing and on March 13 had almost completely closed, leaving but a single opening into the antrum, so that on March 30, the impression for an artificial denture was taken.

The patient's health had wonderfully improved, he being free from pain and sleeping soundly. He was able to resume the management of his affairs and was again in good health, continuing so until August, 1894, when he contracted pneumonia, from which he died. Two months prior to his death, the cancerous granulations appeared in the old wound. There was no disfigurement of the face from the operation, and the only inconvenience was the loss of his natural teeth, as he was unable to wear the artificial substitute.

A lad 13 years of age was brought to me in March, 1893, giving a history of complete nasal stenosis of some years' standing and a clear history of adenoids. He had been under medical care for years, the physicians failing to recognize the cause of his trouble. I have never operated on a more lifeless and waxy-looking creature. The odor from his breath and body, which was steeped in pus, was most sickening. All of the upper oral and bicuspid teeth were so loose that but for the periosteal attachment, they would have dropped out. There were large sinuses under the lips and the roof of the mouth through which pus exuded. The periosteum of the roof of the mouth was so filled with pus, that it bagged. All the bone of the superior maxilla anterior to the first molar, including the palatal plate, was necrosed, likewise the palatal bones and the inferior turbinates. The adenoids completely filled the nares and crowded into the antrum of Highmore, breaking down the walls, and advanced until the process of destruction was complete. Pus oozed from all the loose teeth and through the sinuses, nose, mouth, and out through the lachrymal ducts into the eyes. The throat was so plugged up that breathing was very difficult and ptyalism extreme. At this operation I removed what I could of the adenoids, opening the nasal passage and partially cleansing the antrums, which was done with great difficulty, as the boy took chloroform badly, owing to extreme anemia; the loss of blood was not so very great. The loose teeth were supported by ligatures until held by the new bone.

The patient made a very good recovery from the operation and in forty-eight hours the improvement was noticeable. The wounds were dressed daily and, through the sinuses, douched every hour. Recovery was so rapid that in four weeks I was again able to operate, this time removing all of the necrosed bone and thoroughly curetting the antrums.

The boy made rapid strides toward recovery and by May 1 I was able to perform the final operation, when I removed the remaining adenoids. Here occurred a profuse hemorrhage, but with peroxid and hot water it was quickly checked. Most stimulating tonics and nourishing diet were prescribed from this on. Recovery was marvelous, and in two weeks the patient was able to walk to my office for treatment. By June 1 he was dismissed cured, having gained forty pounds in weight, having regained his normal color, good appetite and usual strength. He then went to his country home. I saw him again in one year. There was no occasion for treatment; with the exception of a slight imperfection in the alveolar process, where there had been a deep sinus, the gums did not unite and a few adenoids had appeared. The only additional opening, through which I operated, was made where I extracted the left superior molar, this being badly diseased, and through which I was better able to reach the antrum.

To facilitate cleansing of the wound and destruction of the pus, I found electrozone the best of all agents for this purpose.

I have done many cases similar to those stated, and without deformity in any instance. All of them are accompanied by blood poisoning and have usually been treated for rheumatism, malaria and typhoid fever for months and even years, before the error is discovered.

This conservative method is not conducive to a fine collection of pathologic specimens, as a recovery of a part without blemish leaves only the history of the case and the statement of the patient as proof of the malady.

The student should have a chance to see in practice the methods he wishes to adopt. In this city, only recently, at our great university, no end of strife resulted from a determined and successful effort of the dental department to make a place in the hospital for their oral surgeon, with equal right to operate. This was the beginning of the end when all such institutions must of necessity adopt the same course. Why confine this work to so-called major operations,

when they can be simplified to the minor class by annexing such men, skilled in dentistry and medicine alike, to the medical faculty. Let us hope that the controllers of such faculties will appreciate that "knowledge is power" and that new methods are a necessity.

7 West Fifty-eighth Street.

A CASE OF PSEUDO-MEMBRANOUS (DIPHTHEROID) STOMATITIS, CAUSED BY THE STREPTOCOCCUS PYOGENES.

Presented to the Section on Laryngology and Otology, at the Forty-eighth Annual Meeting of the American Medical Association, at Philadelphia, Pa., June 1-4, 1897.

BY LOUIS JURIST, M.D.
PHILADELPHIA, PA.

Although diphtheria and diphtheroid diseases are of very frequent occurrence, the mouth and tongue are but rarely affected, in spite of their exposed position and liability to injury. The micro-organisms which are responsible for the deadly group of pseudo-membranous inflammations must traverse the mouth in order to gain access to those structures in which they most commonly develop their nefarious activity, yet the oral mucous membrane, where the conditions in general are very similar to those at the points of selection, is practically immune to the influence of the micro-organisms in question.

It is the great rarity of oral diphtheria that has led a number of authors to deny its existence as a primary disease, while admitting its possible, but very infrequent occurrence as a secondary manifestation.

While the case I report is, etiologically, not one of true diphtheria, since it was not caused by the Klebs-Loeffler bacillus, the invariable producer of the disease, it yet presents the clinical features of diphtheria, and but for the bacteriologic examination, would have passed as an unusual example of that dreaded malady, just as many instances of pseudo-membranous throat affections are termed diphtheritic, when in reality they are not due to the bacillus of diphtheria.

The history of my case is as follows: Late at night, July 22, 1893, I was called to Maggie M., age 20. The alarm of the family and the statement of my summoner that she was choking to death, seemed well founded. Sitting in a chair, the tongue enormously swollen and protruding as a thick mass from the mouth, the facial expression one of anxiety and suffering, the young woman presented a most distressing aspect. It was learned that some days previously the patient had had an attack of vomiting and diarrhea, which had yielded to treatment. Shortly thereafter the tongue began to swell and the present condition supervened.

The floor of the mouth and the under surface of the tongue were covered by a thick grayish membrane. The tongue was swollen and rigid; its dorsal aspect somewhat coated, but free from false membrane. There was a repulsive odor of the breath. An examination of the pharynx was rendered impossible by the intumescence of the tongue. The skin was moist and cool, pulse rapid and feeble, temperature 101 degrees.

During the next two weeks the general condition remained about the same; the membrane gradually spread to the upper and lower lip, confining itself to their inner surface, and also crept along the cheek, being particularly limited to that portion in contact with the upper and lower teeth. Frequent slight hemorrhages occurred, becoming freer if portions of the membrane were forcibly detached. During the height of the disease the submaxillary lymphatic glands were enlarged, while a well marked edema involved the entire face and neck, extending from ear to ear. Deglutition, the diet naturally being restricted to fluids, was accomplished fairly well, when the head was thrown back and the liquid poured into the oropharynx.

As the patient slowly improved, an examination of the pharynx became possible. Two oval, distinctly outlined patches were noticed on the hard palate, close to the last molars of each side, and extending toward the median line, but without coming in contact. There was no membrane on the soft palate, the uvula, the tonsils, or the palatal arches.

After a time the membrane ceased to form, the tongue diminished in size and eventually regained its normal proportions and contour.

The internal treatment was supporting. Locally, the use of hydrogen dioxid, followed by corrosive sublimate, was instituted. Steam inhalations of sodium benzoate were employed. As improvement did not follow, the inhalations were, after a few days, superseded by applications of electrozone. After thorough cleansing of the parts, pledgets of absorbent cotton saturated with this liquid were placed against the affected areas and frequently changed.

Upon my return to the city after an absence of several days, I received the following letter from Dr. Kinnier, who had charge of the case:

> I thought perhaps it might be of interest to you to know what has been the line of treatment in the case of Maggie M., since you last saw her.
>
> I believe the electrozone did good, but unfortunately there was not enough to give it a thorough trial. After its discontinuance the mouth became much worse, the peroxid, full strength, making very little impression.
>
> As the case seemed extremely urgent, I resorted to argenti nitras (grams 1.3 to c.c. 30) applied three times a week, and potassium chlorate, gram 0.32, every two hours, night and day. The result was magical.
>
> There was quite copious bleeding on two occasions, due to the ulceration on the left side of the tongue extending into a small vessel. The bleeding was of decided benefit, as the inflammation immediately subsided. There remains now only a small patch about the size of a three cent piece on the buccal surface of the right side, near the angle of the jaw.

One year later there was a distinct scar which prevented protusion of the tongue.

Regarding the course of infection it was impossible to obtain any precise data. All that could be learned was that the patient had come in daily contact, in her workshop, with a young woman in whose family there had been two recent deaths from diphtheria. The patient's teeth were wretchedly kept and the majority carious.

In order if possible to determine the ultimate nature of the case, a piece of membrane was sent to Dr. Eshner, who submitted it to Dr. A. C. Abbott of the Department of Hygiene, University of Pennsylvania, for bacteriologic study. The following is Dr. Abbott's report:

> Dr. Almstead, our assistant, has gone over carefully, under my supervision, the piece of membrane from Dr. Jurist's case of supposed diphtheria of the tongue, and we fail to find anything either in the way of bacteria or tissue changes, to justify the opinion that it is of a diphtheritic nature.
>
> The only bacteria that are present in conspicuous numbers are streptococci, and I feel reasonably sure that they played the etiologic role in the production of the trouble. There are often exudative inflammations on and about the pharynx of this origin that can not be differentiated from diphtheria

except by bacteriologic methods, and this is very probably one of them.

In view of the foregoing report the case can not be considered one of diphtheria of the mouth, but must be classed among the so-called diphtheroid affections. In examining the literature on the subject of diphtheritic inflammations of the mouth (using here the adjective in its widest or anatomic sense, that in which Virchow employed it), we find the earliest reference in the work of Aretæus.[1] The remarkable passage in the *Syrian Ulcers* in which Aretæus portrays the essential features of diphtheria in a wonderfully complete manner, contains this reference to the mouth: "When this (the ulceration of the tonsils) eats outward toward the mouth, it reaches the uvula and destroys it. Likewise it may involve the tongue, the gums and the alveoli, until the teeth become loose and turn black. The phlegmon may also extend to the throat. Such patients die in a few days from the inflammation, the fever, the fetid odor and the hunger. If, however, the disease passes through the windpipe into the thorax, it then kills on the same day, for the lungs and the heart can not endure such an odor, nor the ulcers, nor the ichor, but cough and dyspnea are developed." Van Swieten,[2] the commentator of Boerhaave, observed the occurrence of diphtheria of the mouth during an epidemic at Leyden, in 1738.

In the present century we find that Bretonneau[3] was the first to give a clear description of the disease, but he, as well as the earlier writers did not distinguish the ordinary ulcerative stomatitis, so common on the gums at the roots of the teeth, from the rarer diphtheritic form. That Bretonneau, however, did see cases of the latter is evident from one of his papers, in which he says that toward the end of the epidemic at Tours he observed eight children in the same ward seized with "*gangrene scorbutique*" of the gums of the right side. On the second day three had membranes on the corresponding tonsil, with enlargement of the submaxillary glands. In all, the borders of the tongue and the internal parts of the cheek were covered with membrane. In some cases, he adds, the disease may extend into the pharynx and larynx, a calamity which he believes to have been averted in the eight cases by the vigorous local use of hydrochloric acid.

Trousseau[4] shares the views of Bretonneau, but seems to consider extension from the mouth to the pharynx and even to the larynx as quite common. Among contemporary writers we note that Butlin[5] doubts the existence of primary diphtheria of the tongue, admitting, however, as a rare possibility the occurrence of diphtheritic inflammations upon accidental or operative wounds of the tongue. The liability of the tongue to secondary diphtheria is also small. According to Jacobi,[6] the disease may be primary.

Forchheimer,[7] in his excellent series of papers on stomatitis in the *Archives of Pediatrics*, treats of a croupus and diphtheritic form. The first is never primary, but "is always a complication of angina crouposa. The second occurs rather frequently in birds and calves, and has occasionally been observed in man." The distinction which Dr. Forchheimer makes brings up the much discussed question of the identity of croupous and diphtheritic inflammations. I have no desire to dwell upon this subject except so far as to say that there seems no longer to be any justification for the separation of those conditions into two autochthonous diseases.

J. Lewis Smith[8] states that the diphtheritic pellicle sometimes forms in the cavity of the mouth, generally in small patches except upon the tongue, where the the pellicle extends more deeply.

An interesting case, one of true primary diphtheria, is reported by Thiercelin.[9] The patient, a woman aged 30 years, complained of pain in opening the mouth, had anorexia and a little fever. On examination the lower surface of the tongue and the floor of the mouth were covered with a whitish-gray membrane. The tongue was not swollen, its dorsal surface bore a thick coat but no membrane. The internal aspect of the cheeks and the external surface of the gums, especially the lower, presented false membranes. There were also two patches on the lower lip, vestibular surface; none on the upper. At the base of the teeth there was some ulceration, but apparently not of a diphtheritic nature. The disease did not extend beyond the pillars of the fauces; the pharynx was perfectly free. The submaxillary lymphatic glands were swollen, mastication was impossible; an intense fetor and salivation were present. An examination of the membrane revealed the presence of an abundance of Klebs-Löffler bacilli, which were also demonstrable in serum cultures at the end of twenty-four hours. There were no streptococci, no staphylococci. The patient recovered.

Sevestre and Gaston[10] conjointly report a series of cases of membranous stomatitis, the features of which, according to the authors, entitle it to be considered a new clinical entity, and they give it the name of *stomatitis impetiginosa*. It attacks debilitated children, especially those recovering from measles or whooping cough. A whitish, adherent membrane, very similar to the true diphtheritic exudation, forms in the mouth, on the gums, the internal surface of the cheeks and lips. On the tongue the formation of pseudo-membrane is rare and occurs in small, elongated patches, particularly on the borders and tip. In their series of ten cases the involvement of the tongue was noted but once, in a child of 21 months. The lymphatic glands are only slightly tumefied. In nearly all instances the disease is associated with impetigo of the face. Bacteriologic study demonstrated the presence in every case of the staphylococcus pyogenes aureus.

At the suggestion of Rendu, Sevestre[11] tested the reaction of the saliva in a case and found it acid. A very curious disease, also characterized in part by the formation of a false membrane, is described by Siegel,[12] who observed it in epidemic form in the neighborhood of Berlin during a period of three years, from 1888 to 1891. The membrane is found upon the swollen and edematous tongue in the form of a yellowish, often deep black or even inky, firmly adherent layer. The gums are swollen and the teeth are loosened. Eruptions petechial or vesicular are frequently present on the legs and arms; constitutional symptoms are grave. Not rarely the disease is fatal. Siegel, who terms it *stomatitis epidemica*, regards the affection as identical with the foot and mouth disease of cattle. Owing to its rarity the proper nosologic position of *stomatitis epidemica* remains still somewhat obscure. It probably bears no relation to diphtheria.

Wharton's[13] case, a boy aged 6, had the tongue much enlarged, partly protruding from the mouth, covered with a thickened epithelium which could be stripped

off without much difficulty; there was a patch of white membrane upon the inner surface of the right lip and inner surface of the right cheek, the neck was swollen, submaxillary lymphatic glands much enlarged. Bacteriologic examination revealed the Klebs-Löffler bacillus, the guinea pig succumbing to subcutaneous inoculation in seventy-three hours.

The chief points in the present paper may be summarized as follows:

1. True diphtheria, *i. e.*, a disease caused by the Klebs-Löffler bacillus, may occur in the mouth both as a primary and as a secondary manifestation.

2. Pseudo-membranous inflammations, clinically indistinguishable from diphtheria of the mouth, may be produced by other micro-organisms.

3. As far as the cases reported go, we must accord this ability to the streptococcus pyogenes and to the staphylococcus pyogenes aureus.

4. Grave septic states have not been observed in those cases where the disease remained limited to the mouth.

LITERATURE.

1 Aretæus: De morb. acut., l c. q. Ed. F.Z. Ermerius; quoted by Haeser, Geschichte d. Med., iii, p. 430.
2 Van Swieten: Quoted by Bretonneau.
3 Bretonneau: Des inflammations spéciales du tissue muqueux et en particulier de la diphtherite, Paris, 1826.
4 Trousseau: Memoirs on Diphtheria. The New Sydenham Society, 1859.
5 Butlin: Diseases of the Tongue. Cassell & Co., 1885.
6 Jacobi: Pepper's System of Medicine, Lea Brothers, vol. 1, p. 672.
7 Forchheimer: Arch. of Pediatrics, 1889, vi, p. 364.
8 Smith: Keating's Cyclopedia of Dis. of Children, vol. 1, p. 617.
9 Thiercelin: France méd., 1802, xxxix, p. 385.
10 Sevestre et Gaston: Bull. et mém. Soc. d. Hôp. de Paris, 1891, 3 s., viii, p. 316.
11 Sevestre: Ibid., p. 345.
12 Siegel: Deut. Med. Wochenschrift, 1891, xvii, 1328.
13 Wharton Med. News, vol. lxvi, No. 15.

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ACUTE MYRINGITIS.

Presented in the Section on Laryngology and Otology, at the Forty-eighth Annual Meeting of the American Medical Association, held at Philadelphia, June 1-4, 1897.

BY RALPH W. SEISS, M.D.

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The subject of acute myringitis is usually disposed of in a page or two in most text-books, and one of the most popular modern treatises does not even mention it, yet its widely dissimilar course in different patients, its tendency to produce serious lesions, and its painful character render the disease worthy of most careful study. Acute myringitis differs much in type, each having its own pathology, symptomatology and treatment; it is therefore convenient to divide it into simple, desquamative, hemorrhagic and suppurative varieties.

Simple inflammation of the drum membrane is caused by disease of the external auditory canal, of the Eustachian tube and middle ear, or by direct injury from foreign bodies, irritating fluids, cold water, etc. It is one of the commonest of aural maladies, the ordinary cases of slight earache being usually examples of this disease. The symptoms are usually pain, slight deafness and throbbing tinnitus. Pathologically the condition is one of active hyperemia, with serous infiltration of the layer of the cutis. On inspection the drum shows intense congestion of its upper and central portions, and the malleus may be more or less obscured by swelling. This condition usually promptly subsides under appropriate treatment, or in some cases even spontaneously, or it may progress into the desquamative form.

The symptoms in the latter case are always much more marked than in the earlier stage, pain is often great and boring in character, and deafness may be nearly complete from combined swelling and mechanical obstruction by the large epithelial masses. The epidermis macerates, becomes loose and is finally shed off in large flakes, occasionally representing the whole outer surface of the drum, and the raw corium is thus exposed; the swelling is marked from both serous and cellular infiltration, and the whole membrane becomes friable and soft. Examination may be impossible until the external canal is cleared of the shed epithelia; when the drum is brought into view the position of the manubrium is recognized only by the red lines of engorged blood vessels, and the whole fundus may have a raw beef-like appearance.

The prognosis is recovery in a few days under properly applied therapeutics, but perforations and permanent thickening are exceedingly apt to occur if the case is neglected, or the acute condition with pain and deafness may continue even for weeks. The amount of desquamated skin thrown off is often surprising, the fundus sometimes being found completely blocked with it every two or three days for a considerable period. This is one of the ways that the large dermoid masses, occasionally found in the external auditory canal, are formed.

Hemorrhagic myringitis Politzer considers a rare disease and the writer has not seen above 20 examples in his last 2000 ear cases. It seems to occur only in ears which have been previously damaged by chronic disease—sclerosis, cicatrices, dense impacted cerumen plugs, etc. The blood vessels appear to give way at one or many weak points, and myringial apoplexies result. The symptoms do not differ from those of the desquamative form, but there appears to be more tendency to constitutional involvment—fever, malaise and weakness—and deafness is more apt to be extreme.

The diagnosis is easy on inspection, the dark purple blebs, varying in size from a No. 8 to a No. 1 shot, standing freely out from the generally congested surface of the drum, or from the canal adjoining. Hemorrhagic myringitis is especially apt to run a somewhat chronic course, successive crops of blebs appearing; even under treatment the duration is apt to extend to at least a fortnight. In one case treated by the writer about eighteen consecutive blood blisters formed and were cut, and the treatment had to be continued for about a month. This case occurred as a sequel of epidemic influenza and chronic aural catarrh, and was characterized by constitutional depression quite out of proportion to the severity of the general disease; the drum finally cleared up completely without any permanent injury to hearing.

Suppurative inflammation of the membrana tympani may occur from septic disease of the middle ear or the external auditory canal, or in rare cases is purely primary, such instances not being very uncommon from sea-bathing. In the primary cases a true abscess occurs between the layers of the drum, which may break outwardly, with or without complete perforation of the membrane. Inspection may show the bulging abscess in addition to intense engorgement, or an ulcer the result of its rupture or perforation may have occurred. The symptoms are generally quite severe, the pain being more like that of general suppurative otitis in character. The prognosis is often more favorable than in either the desquamative or hemorrhagic types, a single treatment often effecting a cure.

The therapeutic management of acute myringitis is most important, as the tendency of the disease to produce permanent lesions can nearly always be obviated by proper care and the pain and discomfort promptly reduced to a minimum. In the simple acute type syringe irrigation with a warm boric or carbolic acid solution has a most happy effect; at least a pint of fluid should be used, great care being taken to cause no pain or traumatic injury. The surplus fluid should be lightly mopped from the canal with a soft cotton tuft, and the meatus loosely plugged with gauze or cotton. If the engorgement is intense and desquamation or suppuration is feared, it is my habit to lightly dust the drum with the calendulated boric acid formula of Sexton; this often appears to give great comfort and seems free from objections.

If the Eustachian tube and the middle ear are involved their treatment is most important. This should consist of sedative sprays applied to the naso-pharynx, preceded, if much swelling exists, by the very cautious use of a weak cocain solution.

When engorgement is largely limited to the tube and post-nasal region—an acute Eustachian salpingitis of which the myringitis is a sequel—the cocain solution and also the subsequent wash is best applied by the syringe catheter, the utmost gentleness being used. Inflation of the middle ear by Politzer's or other method has never had any but an unfortunate effect, in my experience, when used in this disease; many cases that would have recovered without any treatment are by it converted into examples of acute middle-otitis, and it is only mentioned here in order to condemn it absolutely in true myringitis.

Desquamative inflammation of the drum is a much more serious affection than the preceding, as actual destruction of tissue has necessarily occurred, and calls for very careful management. It is of the utmost importance to entirely clear the aural fundus of the decomposing irritating masses, as their presence is a fruitful source of further mischief. Syringing should be employed as above suggested, but owing to the insolubility of the epithelial masses, their removal can seldom be perfectly accomplished by this means alone. Burnett's double-pointed screw or the writer's L-shaped hook are the most satisfactory instruments for its removal in trained hands; Sexton's or some similar forceps may be employed by the somewhat less dextrous. After thorough antiseptic irrigation and cleansing, the fundus should be thoroughly dried and very lightly dusted with dermatol or the calendulated boric acid. The nose, throat and Eustachian tubes should also receive appropriate treatment if at fault; even the cases due to local traumatism are benefited by relieving a coexistant nasal or pharyngeal congestion; the naso-laryngeal tract should therefore always be subjected to close scrutiny. Rest within doors and tonic treatment are often indicated in desquamative myringitis, and if the symptoms do not at once subside the patient should receive local treatment daily. Persistent thickening may subsequently call for massage, Eustachian catheterization or judicious applications of iodin ointments to the drum after all the acute symptoms have subsided.

The hemorrhagic form of myringeal inflammation has been best treated, in my experience, by freely incising the blebs as they appear, gently syringing out the blood clots and insufflating a boric powder containing from 5 to 10 per cent. of alum, a light coating only being applied to the fundus. The naso-tubal tract always needs attention, and tonic treatment is generally urgently needed, these cases occuring only in persons of poor vitality with weak vaso-motor nerves and vulnerable vascular systems. As the disease has a strong tendency to recur, any existent chronic affection of the ear should be removed as thoroughly as possible and the general system brought up to its highest tone. The writer has seen several cases in which glaucoma occurred in patients who were the subjects of recurrent hemorrhagic myringitis, which may perhaps be regarded as corroborative evidence of the general blood vessel weakness.

Suppurative myringitis is more often a primary disease than is sometimes taught, being not very uncommon from various forms of external injury. If the purulent exudation be only superficial, syringing with carbolized solution, lightly drying the fundus and slightly dusting with powdered acetanilid, is often sufficient to at once arrest the attack. If interstitial suppuration has occurred the minute abscess should be opened, but only when the whole middle ear is known to be involved is it necessary to cut completely through the drum. While probably the mucous membrane of the tympanum is always congested in suppurative myringitis, it is quite common for cases to at once subside without any discharge from the middle ear or perforation of the drum, even though the swelling of the latter may have been extreme and the external purulent exudation considerable. In a few cases the irrigation and acetanilid may have to be continued for several days, or in rare cases the whole middle ear may become involved and perforation occur; the latter is, however, a most unusual accident under modern treatment.

The object of the writer in this brief sketch has been to call attention to an apparent want in modern otologic literature, and to further specialize the somewhat too generally treated subject of acute otitis. The classification suggested is believed to be new, and to be founded upon perfectly definite pathologic facts.

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DISCUSSION.

Dr. HERMAN KNAPP—In some cases I have not been sure whether myringitis or middle-ear disease existed. Such are the cases where after sea-bathing there is earache, and on looking into the ear we find that the drumhead is softened and reddened, as is also the adjacent portion of the canal. For treatment I have advised rest for several days, with the result that the redness has disappeared without any other treatment. I think that parasitic myringitis should come under this head. It occurs almost exclusively in the drumhead and is not very frequent. It is remarkable that these cases of parasitic myringitis occur more often among the wealthy than the poor. I have treated these cases successfully by 4 per cent. of salicylic acid in alcohol. If this is put into the ear three times a day the parasite is very soon destroyed. I have used the same solution also in parasitic troubles of the throat.

Dr. HEFFNER—Is there any irritation from the instillations of alcohol?

Dr. KNAPP—As I have used it, it does not produce any irritation, and cures these cases more quickly than any other remedy.

Dr. J. A. STUCKY—I am disappointed in the treatment of these troubles of the membrana tympani with the Politzer bag and syringe. The bag should be used cautiously, if at all. I question the use of large quantities of water in cleaning the canal. It rather increases than diminishes the pain. Patients will endure gentle syringing to the extent of two or three ounces of water very well, but it should not be carried to the point of dizziness or discomfort. I have the best results from keeping the patient in the recumbent position for a day or two. Where this could not be done I have had excellent results by administering salicylate of soda in 0.65 gram doses, every two or three hours, and applying locally 10 per cent. of

cocain and resorcin in aqueous solution. The action of the cocain is intensified and prolonged by the resorcin and rendered more readily absorbed.

Dr. SCHEPPEGRELL—As to parasitic myringitis being more a disease of the wealthy than of the poor, my experience has been to the contrary. In hospital work I find many cases, but in private practice they are very rare.

Dr. FREEMAN—Under what head does Dr. Seiss place these cases of myringitis where there is a form of bleb on the membrane?

Dr. SEISS—Hemorrhagic. As to the pain of syringing, I have a large clinic with eight assistants, and when these cases come in two of these assistants attend to them. These two gentlemen can use a syringe with a quart of solution and give relief to the patients; my other six assistants will make the ears of the patients ache. The way the syringe is handled makes the difference. As to the use of cocain, the general surgeon and the ophthalmologist have decided that even moderate solutions in inflammatory conditions are wrong. To use it in active inflammation has made these cases worse.

ACUTE AND CHRONIC CARIES AND NECROSIS OF THE MASTOID; PACHYMENINGITIS EXTERNA; EPIDURAL ABSCESS.

Presented to the Section on Laryngology and Otology, at the Forty-eighth Annual Meeting of the American Medical Association held at Philadelphia, Pa., June 1-4, 1897.

BY HERMAN KNAPP, M.D.

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Of all the ear diseases, I know none that are, on the one hand, so important and dangerous, and on the other, so gratifying and manageable as the group comprehended in the title of this communication. If left alone they prove fatal in a large percentage of cases; if treated understandingly, they nearly all recover. The grippe has made us familiar with acute mastoid caries. In the first or second week of an attack of acute otitis media there is intense pain in ear and head; tympanic membrane red and bulging; in a few days otorrhea, with or without paracentesis of the drumhead; relief of pain for a few days, then return of it with tenderness and swelling of the mastoid, membrana tympani bulging in upper-posterior part, slight fever, loss of appetite, headache, mental depression; hearing greatly impaired. The further course varies greatly. The discharge may be free for a time, then diminish and disappear together with the other symptoms—natural recovery in the first stage. Or the swelling over the mastoid and the other symptoms become more pronounced, the outer table of the bone is perforated, a post-aural abscess forms, breaks, and the patient gets well—recovery in the second stage.

In the third stage a perforation through the medial table takes place, either outside the skull into the digastric fossa, or into the cranial cavity, more frequently the posterior cranial fossa than the middle. Exceptionally the pus travels through the fenestræ into the inner ear and farther through the internal auditory meatus into the cerebellar cavity. The two varieties are frequently combined and terminate fatally by meningitis and sinus thrombosis, rarely by abscess.

After this brief sketch I will illustrate the chief features of the affection by abstracts of some case histories.

Case 1.—Tympano-mastoiditis from grippe. Acute caries of the mastoid. Extensive operation. Rapid and perfect recovery. End of February, 1896, Mr. G. A. St., a healthy, strong man, was attacked with grippe. In the second week, ear and headache; paracentesis of drumhead; copious otorrhea; relief for a few days. Then symptoms were aggravated; fever; no particular swelling of upper-posterior end of ear canal; drumhead white, moist, perforated. Mastoid slightly swollen and tender, particularly at the tip and posterior border. Gland over the tip swollen. Temperature 100.2 degrees; pulse 64. Two days later symptoms more pronounced; posterior-upper part of canal slightly bulging.

Operation under ether. Large incision down to bone from tip to above the auricle; periosteum scraped aside; bone over antrum discolored. Chiseling at the antrum pit soon gave vent to thin pus. The interior of the mastoid was one mass of brittle bone, pus and granulation tissue. The outer table and the whole tip removed, laying bare the digastric fossa. The head of the muscle was not infiltrated. The mastoid cavity was most carefully scraped with sharp spoon, until the wall appeared clean and glistening. The inner table was not corroded, the operation being done as early as seven or eight days after the onset of the ear affection. The patient's neck felt stiff for a few days, after that he made a rapid and complete recovery, with hearing as good as before, and with a surprisingly small indrawn scar.

The most remarkable feature in this case is the rapid destruction of the interior of the mastoid and the caries of the whole tip, tables and interior. The total removal of the tip in such cases is the best guarantee of a quick, undisturbed and permanent recovery. If the tip is left, the improvement after the operation is only temporary; relapses with headache and other ominous cerebral symptoms are apt to follow until the tip is removed. This was exemplified by a case I published several years ago, and, I fear, by a recent case which terminated fatally. Its history is as follows:

Case 2.—Acute tympano-mastoiditis. Extensive caries. Recovery delayed until necrosed tip was removed. Well three months, then died of typhoid fever. Frank Steinbrugger, aged 59, contracted a cold, end of March, 1896; ear and headache; paracentesis; otorrhea. First seen May 4, 1896. Upper-posterior part depressed; mastoid tender and swollen.

Operation. Large opening of mastoid, striking pus in a depth of three millimeters, through ivory-like hard bone over antrum. Extensive cavity filled with brittle bone, pus and granulation tissue, which was cleanly removed. Left hospital in twelve days; treated at office, occasionally. Went to business. At the last visit he paid me, about two months after the operation, the remnant of the tip of the mastoid was necrosed, yet still immovable. His family physician extracted it a few days later. Patient felt well for three months; attended overzealously to his business, and died of what his family physician declared to be a case of typhoid fever. I have no reason to doubt this diagnosis, yet the differential diagnosis between typhoid fever and the intracranial complications of mastoid empyema is not always easy.

Case 3.—Acute tympano-mastoiditis, not operated on. Death from epidural abscess and meningitis. In the *Archives of Otology*, 1895, p. 263, I published a similar case under the title: "A healthy man, of 44 years, had an acute purulent otitis media, after the grippe. Under treatment with paracentesis and topical remedies, rapid improvement, so that he resumed his business (piano-teaching). Relapse of otitis with severe cerebral symptoms; no operation; death. Autopsy: suppuration of mastoid, with perforation into posterior cranial and digastric fossæ; meningitis." Two days before the patient's death, the family physician told me that two weeks previously the patient had had great pain in his left ear and head; was unconscious four days; then dragged his right leg; let fall things held with his right hand, and could not speak. Then there was a complete intermission, during which I saw him. He had had similar attacks, with convulsions, before he contracted his ear trouble, and his father had suffered from the same disease. His younger brother was a drunkard and died a few years previously, and our patient also indulged freely. This family history and the complete intermission might well have clouded the diagnosis, yet I felt so sure of the aural origin of the brain symptoms that I told the physician that I had the greatest misgivings, and that an operation should be done as soon as there was the slightest aggravation of the symptoms. The second night there was a sudden, rapid relapse and the patient died in twenty-four hours. We made an autopsy in the afternoon of the same day. The very instructive, well-preserved specimen of the temporal bone shows a small Bezold perforation and a large perforation of the medial table of the mastoid process, through both of

which the pus from the mastoid had made its way into the digastric fossa and the cranial cavity, inducing meningitis, the immediate cause of death.

These cases may suffice to support my statement that acute caries of the mastoid is an important and, if left alone, a dangerous disease. Let me now prove by actual experience that it is a manageable affection. This I shall endeavor to demonstrate by examples in which the onward course of the disease was stopped by the hand of the surgeon.

Case 4.—Acute caries of mastoid, pachymeningitis. Operation. Recovery. Annie Parker, 35 years old, came to me January 6, 1897. Acute purulent otitis media R.; the usual symptoms; temperature 101 to 102 degrees; mastoid tender, especially at tip and posterior border.

Operation. Large opening of the mastoid; outer table removed. The whole cavity, filled with pus, decaying bone and granulations, was cleansed. The medial table, soft, brittle, and granulating, was removed, laying bare the pulsating dura and sigmoid sinus (perisinuitis). Communication with the tympanum was established. Speedy and complete recovery.

Case 5.—Acute mastoid empyema perisinuitis with cerebral symptoms. Operation. Recovery. Louise Lefebre, age 25. Came to clinic March 7, 1897. *Operation:* Incision the whole length of mastoid; large opening down into the tip; pus, brittle bone, and granulation tissue removed. After the scraping-off of the granulations the lateral sinus lay bare one and one-fourth inch in length; healthy and pulsating. Rapid and complete recovery.

These observations which I have only sketched, may suffice to show how beneficial thorough operations in these cases may be. Thorough, means the removal of all dead material, pus, carious and necrosed bone, and granulation tissue, the constant accompaniment of dead tissue, especially bone. Care must be taken in doing these operations not to injure the lateral sinus, which accident has happened to me five times. It may happen with the chisel, especially one that has sharp angles, but also with a sharp spoon. The accident is mostly without serious consequences, but there are some fatal cases on record (for instance, Kuhn, by entrance of air, Milligan, after an exploratory operation).

Case 6.—Operated on five years ago for mastoid disease. Pain and tenderness in mastoid. Opening. No pus. Injury of sinus. Recovery. Becky Liebermann, came to me March 26, 1897. Five years ago, was operated on in Vienna. Has of late suffered considerably from pain starting from mastoid. Tenderness on pressure, especially on posterior border. No discharge. No swelling or redness of mastoid. Diagnosis: mastoid neuralgia from ossifying mastoiditis. Opening of mastoid; careful chiseling of the hardened and exceedingly vascular mastoid. Finding no pus, I chiseled backward toward the sinus. In scraping the inner table, suddenly a large stream of dark red blood escaped. The wound was tamponed and dressed. The patient made an undisturbed recovery and has lost her pain.

Case 7.—Acute mastoid caries. Pachymeningitis externa. Operation. Recovery. L. Mandelstein, age 50, came to me May 21, 1897. Earache followed by discharge in a few days, ten days ago; mastoid region gradually swollen; doughy, soft over antrum pit.

Operation: Incision from tip to base; the bone, stripped of periosteum, was blackish in the antrum region, from which place pus escaped. Large opening into outer table and tip; very careful scraping removed all dead tissue; the walls of the cavity were hard and shining everywhere except straight backward, where on palpation soft tissue only could be detected. The soft tissue consisted of rather hardened granulations. With the sharp spoon the latter were removed gradually and a gap exposed in the inner mastoid table, which was bordered with the pinkish-white dura mater. Although the dura filled the gap it was possible with the sharp spoon to remove all granulations from it without injury. The wound was tamponed as usual, and May 21, the patient left the hospital to be treated as an out-patient.

In some cases the cerebral symptoms complicating middle-ear disease are so marked that we have to abide by our diagnosis, although on opening the mastoid we find neither pus nor a fistula to guide us. In such cases we should make an exploratory opening into the cranial cavity. In support of this proposition I will briefly relate a case which I detailed at the meeting of the American Otological Society in 1896.[1]

Case 8.—Mastoiditis, epidural abscess, beginning leptomeningitis. Opening of mastoid and cranium. Recovery. Mrs. J., age 52. Chill May 4, temperature, 103 degrees; pulse 106. May 13, chill; severe pain in left ear; great dizziness; temperature 104 degrees; drumhead red and bulging; serous oozing from ear; relief. May 16, discharge suddenly stopped; pulse 84; temperature 103 degrees; projectile vomiting. May 26, nausea, vomiting, delirium; discharge suddenly stopped again; mastoid tender. May 27, cerebral symptoms more pronounced; 6 P.M. decided delirium; great pain in ear; tenderness of mastoid; vomited several times; irrational; muttering delirium.

Operation at 6:30 P.M., ether. I penetrated into the antrum, then the tip; cells lined with thickened mucous membrane; no pus; bone substance very vascular, soft and brittle. The dura mater of the posterior cranial fossa was laid bare two cm. in diameter. No pus being found, I exposed a small patch (7 mm. in diameter) of healthy looking dura mater at the base of the middle cranial fossa, by chiseling forward and upward, directly behind the attic. Then I chiseled from the antrum straight inward and slightly upward, till the probe penetrated into the attic. No pus anywhere, nor a fistula to guide us. Having in this way opened all the cavities which in suppurative inflammations are most liable to transfer infective material into the cranial cavity, I stopped. The patient rapidly improved. Two days after the operation the family physician who conducted the after-treatment, found the dressing soiled with abundant, foul smelling, slightly greenish, purulent secretion which filled the wound completely. This secretion, which in other cases also has been observed to make its appearance one or several days after the operation, must have originated in an epidural abscess, and beginning leptomeningitis.[2] The patient made an uninterrupted and permanent recovery.

What ravages chronic caries and necrosis in the temporal bone may work, can be seen in a specimen which I exhibit. The whole mastoid and the external half of the petrous bone are honey-combed with caries. The disease must have lasted a long time, with free exit of pus outwardly. I have operated on several persons who had this condition and recovered. In the winter of 1896–7 I operated on a scrofulous child whose ear was in the same condition.

Case 9.—Extensive chronic caries and necrosis in the left temporal bone (the petrous portion included) of a scrofulous girl. Pachymeningitis. Perisinuitis. Operation. Recovery. Flossie Heissenbuettel, 3 years old, admitted Nov. 3, 1896. Had measles February 1896; broncho pneumonia; mumps; suppurating glands of neck; empyema; caries and necrosis of mastoid; fistula. Offensive discharge from left ear; mastoid swollen; fistula in which dead bone is visible. Scrofulous glands of neck discharging pus from long fistulæ.

Operation.—Ether; incision from tip up beyond base; periosteum scraped off; dead bone, pus and granulation tissue removed; chiseled the whole osseous wall away, removing all necrosed bone and granulations; at the posterior wall dense, dark granulation tissue, which was carefully removed with a spoon; the dura mater and sinus were extensively laid bare; above and behind the external auditory canal a large mass of carious bone, cheesy pus, and granulation tissue was scooped out; the attic and atrium were gently but carefully scraped till ear-canal, middle-ear, mastoid and adjacent parts of the petrous bone were converted into one large cavity. The child stood the operation well. The ear and glands were dressed with gauze daily for five months, after that more rarely, now every three weeks. There is scarcely any discharge; the cavity is conspicuous, though not half the size as when she was operated upon; it is nicely cuticized; the child has wonderfully improved in general health and can now, seven months after the operation, be considered cured.

[1] Sec. Trans. Am. Otol. Soc., Vol. vi., part iii, p. 290.

[2] In June 1897, the patient presented herself again. She was in perfect health, but *completely* deaf in that ear, and complained of a tendency to dizziness which accompanied her ear disease and had never left her. I found the drum membrane totally destroyed, the medial wall of the drum cavity consisting of hard glassy bone, with an irregular surface. All this makes it probable that the inner ear was involved in the suppuration, and the pus which escaped two days after the operation, may have come from the petrous bone.

These nine cases, which I selected from my recent practice, constitute a series of progressive, acute and chronic destruction with extension into the cranial cavity. One case which received no surgical treatment, ended in death by epidural abscess, the other cases, in which timely and sufficient operations were performed, recovered.

THREE CASES OF SUPPURATIVE OTITIS MEDIA; SEVERE SYSTEMIC AND REMOTE DISTURBANCES; RECOVERY AFTER MASTOID OPERATION AND REMOVAL OF POLYPI.

Presented to the Section on Laryngology and Otology at the Forty-eighth Annual Meeting of the American Medical Association, held at Philadelphia, Pa., June 1-4, 1897.

BY HIRAM WOODS, JR., M.D.

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Certain local changes are admitted as indicating need of the mastoid operation. If one or more of the so-called vital indications be present, the demand is emphasized. Apart from these, cases are observed where there is room for legitimate doubt before and after operation; before, because there are no distinctive local signs of pent-up secretion, and yet we see phenomena most easily accounted for by assuming that such a condition exists; after, because no pus is found, and even if the patient recovers, doubt intrudes if operation were really needed to effect cure. The following cases illustrate this fairly well:

Case 1.—John S., age 30, a white laborer, was admitted to the Maryland University Hospital, February 19, 1896. He had been injured the same day by the falling of an embankment. A fractured pelvis was found. He made an uninterrupted recovery for four weeks, when, the evening temperature, normal for three weeks, rose to 102.5 degrees. He had no pain. The next morning, March 11, temperature was 100 degrees. About noon, after a slight chill, there was another rise. Examination did not reveal any cause for the condition observed. During Thursday and Friday the diagnosis of sepsis became clearer, by the occurrence of frequent chilly sensations, fever, increased pulse rate, sweating, loss of appetite, etc. There were no aural symptoms. On Saturday morning the nurse noticed discharge from the right ear. Temperature was 102 degrees; pulse 96. My attention was called to the man about 1 o'clock. There was no history of previous ear disease. I found pus in the canal, large perforation in the lower anterior quadrant of the drum membrane, Eustachian pervious to both the Valsalvan experiment and to Politzerization, and entire absence of pain. The mastoid was neither red, swollen, nor tender. In view of the apparently good drainage from the ear, I decided against operation, believing that it was a case of painless perforation, and the symptoms would now disappear. Treatment consisted in effecting and maintaining cleanliness. For two days, Sunday and Monday, temperature varied from 99 to 101 degrees. Tuesday evening the man had a chill, followed by a temperature of 103.5 degrees, sweat and prostration. Wednesday the same condition persisted, with the addition of a little redness over the tip of the mastoid. The same afternoon, with temperature 102 degrees, pulse 116, I opened the mastoid under chloroform. The cortex was healthy. The cells were deeply injected, but not more than a drop of pus was found though the opening was continued into the tympanic attic, and a stream of water would pass either way from the ear or mastoid to the other. Recovery was immediate and complete. Temperature reached 101 degrees the day following the operation; but this was the only rise, and the man left the hospital well, May 2.

Case 2.—On January 9, 1897, I saw Josephine N., 6 years old, in consultation with Dr. Thomas McCormick of Baltimore. The child had recovered from scarlet fever three weeks previously. There was a history of acute right otorrhea in infancy. Early in the late illness pain had appeared in the right ear, and had been more or less persistent, though not severe. There had been no discharge. Within the past few days, temperature had become high, after several days of freedom from fever. There was some earache; no more than there had been. Temperature was 100 degrees. The appearance of the canal walls and mastoid was normal. In the drumhead there was the scarred perforation of the former attack. There was, however, no evidence of a tympanic inflammation. Heat was applied for two days, and otorrhea, slight in amount, appeared on the morning of January 11. I did not see the child from the 11th to the 14th. The attending physician noted scant discharge; elevation of temperature; unrelieved pain. On the 15th I found the canal walls edematous, so that a view of the drumhead was impossible. A little inoffensive pus was brought out by the cotton pencil. The mastoid was slightly reddened; more, I thought, from heat than any other cause. Temperature was 101 degrees. I thought we had all necessary indications for operation, and so advised. It was declined, and heat, peroxid of hydrogen and syringing continued until the 17th, when, with temperature 101.6 degrees, pulse 130, local conditions unchanged, operation was accepted. After free incision of the edematous canal walls, and the mastoid periosteum, without finding either pus or a carious point in the cortex, the process was opened, and the opening continued into the attic. No pus was found. Pain was relieved at once; temperature fell to normal, and once during convalescence reached 100 degrees. Otorrhea lasted a few days. The ear hears the watch $\frac{18}{48}$.

In Case 1 there were septic symptoms for five days, when a painless otorrhea called attention to the ear. In Case 2 there was pain in a formerly diseased ear from the commencement of scarlatina four weeks previous. After some days of normal temperature, fever returned, without increase in the aural symptoms. In both the appearance of otorrhea failed to relieve. Both recovered immediately after the mastoid was opened, and nothing short of this helped. Yet no pus was found, certainly in Case 2, and only a drop, if that, in Case 1. Similar constitutional symptoms occur in the cellulitis of general surgery, and disappear when the infected area is drained, without the presence of pus. The existence of a like primary infection in the mastoids of these patients seems the most plausable explanation of their symptoms.

Case 3.—Prof. Samuel C. Chew of Baltimore, called me in consultation on Nov. 4, 1896, in the case of Mr. P., 27 years of age. For a week Mr. P. had suffered from left frontal headache, with slight elevation of temperature. There was a history of old intermittent otorrhea, and it was to determine a possible connection between the head pain and this, that I was called in. The man was in bed, complaining of agonizing left frontal pain; temperature 100.8; pulse 96. History showed suppurative otitis dating back to infancy. No systematic treatment had ever been employed. Occasionally Mr. P. washed the ear himself. For five years these attacks of headache had occurred. They were described as sudden, severe, prostrating, and lasting from a few hours to several days. The ear was free from pain, and neither tapping nor firm pressure of the mastoid was resented. The canal walls showed nothing abnormal. A little pus, bad smelling, was found in the tympanum. The drumhead was destroyed, the malleus standing out prominently, thickened, while, apparently attached to the posterior tympanic wall, small polypoid masses could be made out. The patient's family would not consent to operation of any kind. From the 4th to the 7th the ear was kept as clean as possible by syringing, and the use of peroxid. There was no increase in the discharge, and little decrease in the pain. Temperature ranged from 99 to 101 degrees. On the afternoon of the 7th the condition grew worse. Pain was agonizing, requiring large doses of morphin to keep the man quiet. I now had doubts concerning the adequacy of any operation about the ear. Pain was absolutely localized in the left frontal region. From the beginning nothing had pointed directly to the ear. True, there was a chronic otorrhea, and inspection showed a state of things commonly observed in old suppurating ears; but this was all. That the ear was the primary cause, I had no doubt. That the disturbing factor, whatever it was, had passed beyond the line separating aural from general surgery, I was beginning to believe. Apart from waiting for localizing brain symptoms, two procedures suggested themselves, removal of the polypoid growths, and mastoid operation. I had little faith in the ability of the first to relieve the

symptoms. Not only might the second prove inadequate and leave the patient still in need of cerebral surgery, but such meager indications as there were, pointed to the front, rather than to the rear brain as the seat of disease. I therefore decided to remove the tympanic growths, and if symptoms did not abate, seek a general surgeon's opinion regarding the need of intra cranial exploration. On Sunday morning, 8th, under unsatisfactory cocain anesthesia, I removed the polyps with Buck's curette. Giddiness, profuse sweating, weakness of pulse, and prostration, were the immediate results. Operation was done at 11 A. M., with temperature 99 degrees; pulse 96. At 4 P. M., temperature was 102; highest during illness; pulse 120. During the evening respiration assumed a character strongly suggestive, if not actually, of the "Cheyne-Stokes" variety. At first shallow, it became deeper, and passing again in reverse order, ceased altogether for a few seconds, returning and passing through like a cycle. Pulse rate increased to 140. It looked as though the end was not far off. The ear condition, however, underwent a change. There was a freer discharge of pus. Arrangements were made for operation in the morning, and an early consultation secured with Prof. Tiffany. We found the man still in pain, but his general condition was better than the previous night. Fetid pus discharged freely, and he complained of nausea. Pulse was 76, and temperature 97.2.

Prof. Tiffany expressed the opinion that this subnormal temperature threw a new doubt into the case. It might mean cerebral abscess. He advised further delay. It proved to be the beginning of convalescence. Within twenty-four hours pain subsided, and the patient was out in a week. Since, the tympanic condition has been treated. In March the ear was dry, and the man apparently as well as ever. There is not much chance of his staying so. Sooner or later he will have another stormy experience. His history indicates that there is a gradual change of some kind going on in his mastoid, probably an accumulation of pus, until a certain point is reached. when the storm breaks. It seems equally clear that there is no organic brain disease. In his case, another attack would call for the mastoid operation, even if it should not be done before; but so remote, and apparently serious condition as existed here, is not, so far as my knowledge goes, a frequent consequence of mastoid stagnation.

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DISCUSSION ON PAPERS OF DRS. KNAPP AND WOODS.

Dr. SEISS—Out of my last 4300 cases, only 85 were mastoid. Out of these there was only one death, and that was the only case where any more extensive operation was done than removal of the outer table.

Dr. RANDALL—To know what constitutes disease of the mastoid is essential. Where we have decided swelling, redness and pain over the mastoid region with tenderness to pressure, together with acute inflammation of the middle ear, I call it acute inflammation of the mastoid. I see many cases brought to a successful issue after operation. I have seen quite 100 of these cases every year, and but a small proportion come to operation. I have done as high as thirty mastoid operations in a year, all with pus freely present over the mastoid. In at least one-half of my recent cases the inner table has been broken down, pus was present on the dura, and pachymeningitis more or less present. In the last Stacke operation which I did, I found it impossible to determine where the dura lay. It was covered with flabby granulations, and in removing these with a curette I stopped short because I found I was removing brain tissue. The patient was not hurt by this blunder, so far as I could discover, but it shows that we must be careful. In these cases I can not feel as a general thing that I have done too much. I can not always get complete healing by radical measures, and it is perfectly fitting for those who hold more conservative views to hold them in spite of all that I can say. The majority of mastoid cases can get well without operation and not be in the slightest degree worse for the delay. Last year I had 500 cases; others might say that they were not mastoid cases at all. I can not give only one death in 85 cases, but I have but one death due to operation in 135 cases. One or two died of pneumonia or brain disease, absolutely uninfluenced by the operation.

Dr. WOODS—I am aware that the first two cases I reported are open to criticism as to whether they would not have done just as well without operation. The knowledge of that fact led me to report them. There were no local symptoms of mastoid disease, save the slight redness mentioned; and yet, with a history of acute otorrhea in the first, old suppurative otitis in the second, and temperature characteristic of sepsis in both, operation seems to me the safest treatment.

Dr. LAURENCE TURNBULL—I would like to ask Dr. Knapp as to neuralgia of the mastoid. I know of a case where a young girl passed a bead into the mastoid. It gave no uneasiness at first, but later there was discharge and pain. She came to the Jefferson Hospital with this peculiar neuralgic pain gravitating toward the mastoid, and after cleansing the ear we opened the mastoid and left the bone clean and white. She seemed to be improving for a time, but later returned several times with the intense pain. The mastoid was finally opened a second time; but she still has the pain.

Dr. KNAPP—I have found mastoid neuralgia in cases where a chronically inflamed mastoid is undergoing conversion from the pneumatic and diploic varieties into the sclerosed. When we operate for this condition we mostly find the mastoid compact and, in some layers at least, usually the medial ones, congested. These cases get well by operation, and in time, also spontaneously, I think by destruction of the nerve either by the operation or by compression during the sclerosing process.

WHAT CAN BE ACCOMPLISHED BY TREATMENT OF EUSTACHIAN TUBE,

WITH SPECIAL CONSIDERATION OF THE TREATMENT OF CHRONIC STENOSIS.

Presented to the Section on Laryngology and Otology, at the Forty-eighth Annual Meeting of the American Medical Association, held at Philadelphia, Pa., June 1–4, 1897.

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Let us briefly recall the anatomy and function of the Eustachian tube, in so far as it concerns the measures advocated in this paper. The Eustachian tube is the passage between the naso-pharynx and tympanic cavity—in length thirty-three to forty millimeters. From its relatively large pharyngeal mouth it extends twenty-five millimeters with walls formed by an incomplete furrow of fibro-cartilage, consisting of a posterior and anterior plate, the anterior being movable. This portion of the tube where not cartilaginous is membranous, which with its lining mucous membrane has considerable thickness. This cartilaginous portion of the tube unites with the remaining ten to fifteen millimeters of the osseous portion of the tube, forming with it an obtuse somewhat circular angle of 135 degrees. At this angle the lumen of the tube is smallest; that is two to three millimeters.

The walls of the Eustachian tube are lined by glandular mucous membrane, with ciliated cylindric epithelia, whose ciliary movement is directed toward the pharyngeal opening which has a lower level than the tympanic opening. The lining of the osseous portion is smooth and closely incorporated with the periosteum. With surrounding conditions normal, the normal Eustachian tube allows the passage of air not with absolute freedom, for the tube at rest has its sides in contact, but yet with sufficient freedom to establish an approximate equality of atmospheric equilibrium, allowing the secretions of lining membrane of the tube and tympanum to escape or evaporate. But if atmospheric pressure is not approximately equal the air in the tympanum is absorbed by surrounding liquids through the walls of blood and lymph vessels, obeying the law that liquids absorb their own volumn of associated gas, and thus the air not being renewed in the tympanum, there follow the

well-known symptoms—deafness, feeling of fullness, a probable tinnitus, autophonia, but especially that decisive sign, the appearance of the retracted tympanic membrane itself.

But with retracted membrane the alert aurist would not, necessarily, diagnose at once an obstructive Eustachian tube, as turgesence or hypertrophy of the turbinated bodies alone might account for the rarefied air to a considerable degree. Still more will the pressure be out of equilibrium if the opening between pharynx and naso-pharynx be occluded.

Two cases presented themselves to me which will illustrate this condition to an extreme degree.

M. S., age 40, had periods of great deafness, and in one such period came to me for relief. The tympanic membranes were strongly retracted, the turbinated bodies were very turgescent, the patient being evidently in the midst of an attack of acute coryza. The communication, in this case between the pharynx and naso-pharynx, was totally shut off by a smooth impervious membrane. The history of this condition was as follows: When a schoolgirl at Heidelberg she was bending over her desk with a long sharpened slate pencil in her mouth, the teacher coming behind to rebuke her for idleness, gave the child a blow upon the head with a book. The head was driven down upon the unyielding pencil, whose other end was supported by the desk. Its point was thus driven into the pharyngeal wall. Although attended by one of the able professors of the university, extensive ulceration occurred and doubtless the final condition failed to be presented to him. At least, her condition had remained from childhood as she presented herself to me. At once, on opening this tough membrane with an instrument I had devised for somewhat similar cases her hearing was restored and she was enabled to blow her nose for the first time in thirty years.

Another case, B. S., 4 years old, had scarlet fever a year previous, resulting in great deafness, which was worse at times of coryza. Adhesion had resulted between the pharyngeal wall and the soft palate, producing complete occlusion of the passage. The child was operated on with the above-mentioned instrument, which aided much in the facility of the operation, as it is extremely difficult to manipulate a cutting instrument back of the palate without danger to the carotid arteries. The hearing at once improved and although the sclerosed tissues at the seat of the old ulceration again closed, the operation was repeated a third time after intervening periods of considerable length, when the opening became permanent.

Many cases of lesser degree of obstruction at this point (the naso-pharyngeal opening), would still have the effect of disturbing the equilibrium of atmospheric pressure in the tympanum, and the above cases are only cited because of the absolute demonstration of the effects of rarefied air in the naso-pharynx. Other lesser impediments, as adenoid growths, which I believe directly arise from a previous nasal obstruction, although possibly a temporary one, and which producing this rarefied condition of atmospheric pressure will, with its continuous, yet slight suction power, so affect the yielding tissues of the infant as to cause venous congestion favorable to the growth of adenoid tissue. Retained secretions, bacterial growth therein and consequent irritation likewise favor the growth of lymphoid tissue, conditions that must also be attributed to nasal and naso-pharyngeal obstruction. Thus I believe this tissue instead of being responsible for venous congestion, as is maintained by prominent authorities, is one of the sequelæ of the congestion. The continued pressue of lymphoid growths also favors the continued congestion and obstruction, and likewise hypertrophies of the turbinated bodies, deflected septi, nasal polypi, and nasal spurs, may interfere with the ingress and egress of air and the resulting equilibrium of atmospheric pressure, and they must therefore be removed by appropriate operation or treatment before attention is directed exclusively to the Eustachian tube.

Now, if obstruction of nasal passages or naso-pharynx produces this want of equilibrium in the tympanum, so much more will stenosis or occlusion of the tube itself, and will lead to that venous congestion of the tympanum which I believe is responsible for a very large majority of cases of chronic tinnitus aurium, as well as chronic deafness resulting from sclerosis of tympanic membrane and associated structures, for not only is the circulation of the blood abnormal, but the reverberating sound waves of the blood currents have no longer their normal exit, but are as in the closed seashell, which confines the sound in unbroken walls. I have noticed this tinnitus to be removed for several days after the relief of the venous congestion following the removal of a nasal spur, with free hemorrhage, and so I could explain the relief after depletive measures, as by catharsis and pilocarpin, which give temporary relief. But the belief that free ingress of air into the tympanum will at least relieve the congestion, and therefore the tinnitus, has been borne upon me, especially during the last two years, by the results of a more systematic use of bougies in the Eustachian tube where stenosis of the tube or retraction of the tympanic membrane existed. I have tabulated a series of thirty cases which had long become chronic and which will therefore be of more interest because of their usually intractable nature. Seventeen were chronic cases of tinnitus and all chronically deaf, with one exception which although marked chronic tinnitus, exhibited no degree of diminished hearing, yet was (I think) in the first stage of venous congestion. After systematic use of bougies the results in these seventeen cases was, seven were made entirely free, five improved to such a degree that it became no longer troublesome, while in five there was no reported change. But, with one exception, those not improved had but few treatments. In two of the favorable cases, although the tinnitus had been constant for six or more years, it was removed only after six months of treatment. In the twenty-nine cases of chronically deaf, one only was restored to normal hearing; seven were very much improved; five slightly improved; one heard better in one ear, but worse in the other, while in nine there was no change. One of these cases was of deafness without tinnitus, which was decidedly improved by the bougie, although the air douche had previously failed to relieve to the same extent; yet in this case there was relapse to nearly the first condition, although bougies were used for quite a year. In no case was there any unfavorable result, unless it were in one case, who six weeks after her last treatment was taken with an acute middle-ear trouble, which soon subsided, but the patient had been perfectly free from pain in the interval, in fact relieved in a degree from deafness, and she attributed the inflammation to a severe cold. I speak of this as a possible sequel, as I have been particularly watchful for any possible bad effects from the use of the bougies. Thirty may seem too small a number of cases from which to draw any sweeping conclusions, yet the good results in these few may have been due to the method used in its performance. Appropriate cases, viz., those with retracted membrane and which are given temporary relief by air douche or massage, should be selected.

My rules are as follows:

1. Never delegate the work to another.

2. Never do it hurriedly (several times I have broken this rule and failure resulted), but always

count upon having, if necessary, one-half hour for the operation. Usually it may be done in a minute or less, but difficult cases arise, but if done leisurely an apparently difficult case becomes easy.

3. Have proper fitting, well-shaped Eustachian catheters. Those from Reiner in Vienna have given me perfect satisfaction.

4. Have antiseptically clean catheters and bougies.

5. Prepare the mucous membrane of the nasal passages, especially the pharyngeal mouth of the Eustachian tube, with an application of a 10 per cent. solution of cocain.

6. Smear the bougie with a 3 per cent. ointment made of lanolin and nitrate of silver. This measure is, as far as I know, original, and to it I attribute largely the good results. Unlike other fats lanolin clings tenaciously to the bougie, shields it and makes its passage more easy; and with the argentum nitrate is antiseptic and alterative in effect locally. I have it prepared from the aqueous solution of silver nitrate so that it becomes a stiff emulsion. It is only after long exposure that the ointment undergoes a chemic change, becoming black on the surface but apparently unchanged beneath.

7. Observe that the bougies are in perfect condition. Celluloid may become brittle and therefore highly dangerous, and whalebone may become rough or thready and therefore irritating.

8. Let the bougie rest in place twenty minutes to half an hour in the Eustachian tube.

9. Use the bougie not oftener than twice per week.

10. Measure the bougie and see that it does not advance more than thirty-three millimeters.

After making sure of nasal and naso-pharyngeal freedom, the above treatment seems a rational one, and directed to the securing of equilibrium of atmospheric pressure in the tympanum. To secure this condition I believe should be the foundation effort. Where equilibrium is wanting, air douching, either by catheter, Politzer's method or otherwise, and massage of the ossicles and membranes, can be but of temporary effect.

The analogy of chronic stenosis of the tear duct and of the male urethra is sufficiently suggestive. It would be a timid surgeon that in stenosis of either of those passages would rely upon applications of a vapor or a liquid. If gradual dilatation in those passages is indicated and an accepted measure, I believe it to be in the Eustachian tube. That stenosis may at some time return is no argument that the treatment should not be adopted, but because of the delicate nature of the Eustachian tube it should never be treated by careless or unskilled hands.

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NATURAL GAS AND EUSTACHIAN INFLAMMATION.

Presented to the Section on Laryngology and Otology at the Forty-eighth Annual Meeting of the American Medical Association held at Philadelphia, June 1-4, 1897.

BY JOHN JOHNSON KYLE, M.D.

MARION, IND.

Some few weeks ago it was my pleasure to read a paper before the Western Ophthalmological, Otological, Laryngological and Rhinological Association, calling attention to the effect of natural gas upon the conjunctiva. I now desire, in a general way, to show wherein the natural gas from the Indiana field is a potent factor in causing catarrhal inflammation of the whole pneumatic system, with special reference to the Eustachian tube.

The gas from Indiana differs from that of the New York or Pennsylvania field, in that it contains sulphuretted hydrogen, and in burning the process of combustion is not so complete. Eighty-five per cent. of the natural gas is marsh gas, which is composed of 75 per cent. by weight of carbon and 25 per cent. of hydrogen. The products of combustion, which differ in every case, are carbon dioxid, water vapor, sulphur dioxid, trioxid, nitrogen oxids and ammonia sulphate. The sulphur oxids soon became sulphuric acid, collecting as such upon chandeliers and smoke shades. As a result of the combustion, the greatest irritant to the mucous membrane is produced. This is more noticeable in winter than in summer, and results from imperfect ventilation, thus allowing excessive accumulation of burnt gas, which is constantly thrown off from jets, open fires and stoves. In consequence we have a marked increase of nose, throat and bronchial affections.

The Indiana gas belt covers a territory of 2500 square miles, with a very large population made up of immigrants and foreigners. Where jets are used for illuminating, patients suffering from phthisis, hay fever, asthma, catarrhal pneumonia, diphtheria and scarlet fever, especially suffer from this irritation. Where every effort is made to subdue abnormal cough or throat irritation the substitution of lamps brings relief. The gas is very destructive to carpets, draperies, gold and silverware and surgical instruments. Public speakers, actors, singers, and especially those who are accustomed to moist sea air suffer from this poison.

We consider systemic diseases, climatic conditions, unhygienic surroundings, malarial poisoning, sewer gas and etc., causes of middle ear diseases, and that inflammation of the Eustachian tube is an extension of a diseased condition of the nose and throat. The tissues of the tube are virtually the same as those of the throat, containing lymphatics, a plexus of nerve fibers and nerve cells; within the stroma of the cartilage are numerous mucous glands lessening as we reach the osseous portion. The tube is covered with ciliated epithelium, which are in constant motion, moving like fields of grain. The glandular system of the tube plays the important part in acute inflammation due to natural gas, coincident with similar change in nose and throat. In the prodromal stage all victims suffer more or less alike, complaining of dryness and fulness of nose and throat. The sensation of dryness is not unlike that from cocain anesthesia. If exposed to burnt gas with this we have huskiness of voice and an exceedingly annoying cough. Within twenty-four to thirty-six hours the inflammatory stage, differing in every case, is ushered in by slight elevation of temperature, general malaise, tinnitus aurium and headache. If apartments are illuminated with jets we will have constant cough from the sulphur oxids, and an abnormal desire for sleep, which results from excessive inhalation of carbonic acid gas. On examination in acute cases, we find the mucous membrane of the nose and throat swollen and of a dry glistening appearance. The dryness is so excessive as to cause the mucous membrane of the cartilaginous septum, throat and gums to crack open, which allows exudation of the fluid elements of the blood. This dries in the form of bloody crusts along the septum and is with difficulty

removed, reforming, however, very rapidly. The accumulation of thick mucus tinged with blood is excessive in the vault of the pharynx.

With the exception of the vestibule, it is asserted that the nose and throat is an aseptic cavity! Hugenschmidt (*Annales de l'Institut Pasteur*) asserts that "in the pharynx there are true lymphatic sacs containing various kinds of phagocytes under the epithelial layer, which are constantly being passed on to the mucous surface between the epithelial layer." The gas destructive to the epithelial covering of the pharynx and to that of the anterior septum, most naturally perverts the function of the leucocytes; thus readjustment of the tissues may be slow on account of the constant reinfection.

The tendency of patients in acute cases, due to the swollen and inflamed condition of the nose, is to breathe through the mouth during sleep. As a result of the lessened chemostatic power of the saliva during sleep, we have with the marked local effect in the oral cavity and especially in the throat, elevation of temperature and general malaise, following the invasion of bacteria. The tube when affected, on account of the venous congestion, is swollen and filled with viscid secretion, which is demonstrated by the peculiar sound caused by the current of air being forced into the ear, as in acute cases from colds, etc. Dilatation is not easily accomplished, since on account of the venous congestion, we are compelled to rely solely upon the Politzer method. In cases involving the middle ear, patient complains of fulness, slight diminution of hearing and pain extending to middle ear. We find this especially conspicuous in glass blowers suffering from the disease. On examination we find the drum hyperemic along the short process and handle and always retracted, due evidently to the swollen condition of the cartilaginous portion of the tube. The ear symptoms are not those typically of acute catarrhal inflammation, rather those of the sub-acute form. In from five to six weeks the acute inflammatory symptoms gradually disappear and tissues become readjusted, further proof of the singular function of the adaptation of the mucous membrane to irritating cases. The disease is, however, passive in character and may develop rapidly into chronic inflammation. Chronic catarrhal deafness is such a prevalent disease that it is purely hypothetical to say that natural gas, or any other gas to which the patient is exposed, may alone cause the disease, though we are safe in concluding that in a patient susceptible to such a disease, all the symptoms will be aggravated. In the cases attributed to natural gas the disease was in no wise dependent upon the hypertrophic change in the nose, but upon the diseased condition of the pharynx. The ease with which patency of the tube and mobility of the drum are restored differentiates it, I believe, from so-called catarrhal deafness. The mucous membrane of the anterior septum will in chronic cases be found covered with superficial blood vessels and crusts, which cause frequent septal hemorrhages, a condition closely allied to rhinitis sicca anterior, a disease first described by Siebemann in 1889. The throat symptoms now resemble chronic pharyngitis or clergyman's sore throat, membranes more or less covered with follicles varying in shape and color; superficial veins always in great numbers; the secretion from posterior nares thick and tenacious. In the acute stage the treatment is necessarily palliative and sedative. Unless in the treatment all lights from jets are condemned and oil and electric lights substituted, little result is secured. The mucous membrane of the nose and throat is cleansed with Seiler's or Dobell's solution, followed by a spray of albolin, menthol and camphor solution. In the treatment of tubal and middle ear affections we rely upon the inflation with the Politzer method, condemning the canula and relying upon hot applications and massage, which relieves the congestion and promotes the absorption of any serous exudation within the middle ear. Frequently a change of surroundings is absolutely necessary, as no other form of treatment brings relief. The acute stage usually passes off quickly, and prophylactic and palliative treatment is all that is necessary.

In the chronic stage the treatment of the pharynx with its enlarged follicles and superficial veins, our absolute reliance is upon the galvano-cautery. The stenosis of the Eustachian tube is treated by inflation through a No. 2 or 3 German silver canula with injections of, preferably, menthol camphor in albolin, and massage the drum. The septal hemorrhage from the crust formation and habit of picking the nose, is relieved by the destruction of the superficial blood vessels with the actual cautery or strong solution of nitrate of silver. The crusts are softened, and healing stimulated by yellow oxid of mercury ointment or ichthyol, 3 per cent. in lanolin.

The normal ciliated epithelium is now replaced by cicatricial tissue. In conclusion we assert:

1. Natural gas is an important factor in relation to public health.
2. The elements of combustion are active irritants to the exposed mucous membrane.
3. It is an exciting cause of catarrhal inflammation of the nose, throat and middle ear.

TINNITUS IN ITS RELATION TO NASAL AND AURAL AFFECTIONS.

Discussion in the Section on Laryngology and Otology, at the Forty-eighth Annual Meeting of the American Medical Association, held at Philadelphia, Pa., June 1-4, 1897.

OPENED BY B. ALEXANDER RANDALL, M.D.
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This is a topic which appeals to all of us and it is important that clear views should be obtained of it so far as possible. The division into the objective and subjective forms is hardly worth mentioning, and yet we should remember that there is a large amount of objective tinnitus present in aneurysm, etc. Several cases bring clearly to my mind how easy it is to ignore this matter. It is inevitable that we should have a large bruit ever present, and if an anemic condition gives rise to anemic heart-sounds it may result in similar murmurs in the ear.

It is important in turning to the subjective symptoms, to remember that there are at least five points where this condition may arise, marking the cerebral, the labyrinthine, the tympanic, the tubal and the purely nasal forms. With this distinction it is clear that we are all interested in the question of what we generally call aural tinnitus. The conditions are largely vascular and there may be a local lesion which determines the exact exciting cause. It is of wide spread character, and I suppose there are few who are more prone to tinnitus than the overworked physician. We will find that the proper use of rest, or some of those substitutes that we employ, such as strychnia, will be of distinct value. This will do more for the relief of

these conditions, where there is vasomotor trouble, than the bromids and sedatives. As to the labyrinthine cases we must guess rather than speak with certainty. The tympanic cases are many, and the effect of pneumatic massage will promptly demonstrate that the trouble is located in the tympanic cavity. A little mobilization will account for much of the trouble and give great relief. In all cases I use the pneumatic massage to a great extent. I employ finger-tip massage in this way: Instead of using the mere pressure, I insert the finger into the auditory canal as deeply as possible, and then with a piston movement I can secure a decided amount of suction as well as pressure. This measure I have found harmless as far as tested, and it is always within the power of the patient. I have often found it very effective. In these cases, tubal or otherwise, where we have to resort to other measures, it is often possible that with the best employment of those measures we get only moderate relief, which is for a time trebled or quadrupled by the pneumatic massage.

The manner of tubal relief has been discussed by Dr. Marshall, and I cordially accord with what he has said. Great relief can be had with the use of the bougie, but it is so delicate a procedure that I employ it very little, especially in the dispensary. The employment of silver followed by the vapor of iodin in the tube, is also valuable. It is certainly a potent method, potent for evil as well as good, and should be used with the greatest caution. The element of pressure is an essential and valuable factor in many cases.

The nasal causation of tinnitus is well known. It is well to remember that these are complex matters, and that in some cases the incautious cauterization of the turbinal has been followed by intracranial thrombosis.

Dr. MARTINDALE—In a large number of cases you will find that you are dealing with objective instead of subjective tinnitus. We have tinnitus because there is a slight and often unrecognized lesion in the middle ear or the Eustachian tube, which is sufficient to determine the symptoms to that point rather than to the eye or some other organ. As to the value of the otoscope, I have given up its use almost altogether. It does relieve tinnitus for a short time, but it comes back. I am glad to learn that the results are sometimes permanent. I do think that harm can be done to the canal by the inflammation. Passive motion of the ossicular chain will cause the condition to increase. If the patient is suffering from progressive inflammation, this treatment is like trying to walk with a sprained ankle. If you increase the blood supply by inserting the finger into the canal and manipulating the parts, it may cause an increase of the trouble.

I use the Eustachian bougie a great deal and do not think it is dangerous. I employ a very simple form of instrument made by taking a No. 5 piano wire and bending a hook in one end. This is passed through a Eustachian catheter, and will protrude from the mouth of the catheter about an inch and a half. Wrap the hook with sterilized cotton, to any size you please, according to the amount of stenosis. The advantage is that the cotton can not slip off, and that carried rapidly through the tube into the stricture and allowed to remain a few moments, the cotton increases in size, and you have increased dilatation. You avoid the friction of celluloid, whalebone or other bougies in passing through the cavity. When insertion is made an inch and a half you must continue with great caution. I have used silver, but not for a long time. Nasal tinnitus is often due to labyrinthine conditions.

Dr. MAX THORNER—Often cases of tinnitus aurium have suddenly disappeared after the removal of obstructions in the nasal passages, but we can not promise relief in all cases. I have seen cases where the nose was perfectly normal, with very little trouble in the naso-pharynx or the Eustachian tube. In such cases the result of any treatment depends entirely upon the intra-aural condition. The worst cases are those where we have sclerosis in the middle ear and a patulous tube..

I have removed the ossicles and made multiple incision through the drumhead as recommended a number of years ago, and have seen occasionally some improvement, but this did not last more than two, three or four months. I have used the pressure probe of Lucae, and have given treatment by the exhaustion of air, but no more than temporary improvement has followed in the majority of cases. I have found inflation of temporary benefit. If we would examine in every case, we might find adenoids, or nests of adenoids in a large number, although their removal does not always cure the tinnitus. I have used iodid of ethyl in acute and chronic cases; and frequently have found it give relief, where nothing else would benefit the patient even temporarily.

Dr. MARTINDALE—One objection to the cotton plug is that it only touches one point of stenosis. If an attempt is made to make pressure to a considerable extent, it is hard to get an equal caliber. I also believe that cotton is more irritating than the smooth surfaces of celluloid or whalebone. We need only compare it to the use of the steel sound in the urethra; no matter how small the sound, we find that cotton is more irritating.

THE SURGICAL TREATMENT OF ACUTE INFLAMMATIONS OF THE MIDDLE EAR.

Presented to the Section on Laryngology and Otology at the Forty-eighth Annual Meeting of the American Medical Association held at Philadelphia, Pa., June 1-4, 1897.

BY EDWARD B. DENCH, M.D.

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NEW YORK, N. Y.

Up to a comparatively recent date an acute inflammatory process within the tympanum was scarcely considered worthy of consideration, from a surgical point of view, unless it was of so severe a type as to involve the osseous structures in immediate relation with the tympanum. The general practitioner, and quite frequently the otologist, advised what was then the "conservative treatment" of these cases. The patient was allowed to suffer pain until spontaneous evacuation of the inflammatory products occurred.

It is hardly necessary for me to point out that this plan was erroneous. It was, perhaps, excusable for the reason that only within the last few years has much been written upon the special anatomy of the middle ear. Thanks to the investigations of Blake and Bryant of Boston we no longer consider the middle ear as a single cavity, but divide it into two portions, the atrium and the vault, by a horizontal line drawn through the short process of the malleus, the former portion lying below this line, the latter above

it. On account of this division, we recognize two forms of inflammation of the middle ear, one affecting primarily the atrium, and the other the vault of the tympanum. An inflammation of the atrium is characterized by symptoms common to a catarrhal inflammation in any other portion of the body, that is by an effusion of a fluid. This is due both to an increased quantity of normal secretion from the glandular structures and also to a serous transudation from the blood vessels. Owing to the small amount of connective tissue within this space, suppurative inflammation is practically impossible. On the other hand, an inflammation in the tympanic vault invariably leads to connective tissue necrosis and the formation of pus. The process follows exactly the same course as an inflammation involving connective tissue in any other portion of the body; that is, it constitutes a true cellulitis. The proximity of the tympanic vault to the mastoid antrum, of which it really forms a continuation, and to the middle cranial fossa, from which it is separated by a thin lamella of bone, renders it evident that a purulent inflammation within this space is always a condition of considerable gravity.

I would not have it understood that a purulent discharge from the middle ear can only result from infection of the tympanic vault. In an acute catarrhal otitis, with rupture of the membrana tympani, the discharge which at first is muco-serous in character, is easily infected if allowed to remain in the external auditory canal, and in this way may become purulent. In this event subsequent infection of the vault of the tympanum is common, but is not the invariable rule. The parts within the upper portion of the middle ear may also suffer from an acute congestion. If the inflammatory process extends no further a certain amount of serous transudation will drain along the long process of the incus into the atrium. In this way the engorged vessels are relieved and suppuration and tissue necrosis is avoided.

An acute catarrhal otitis is characterized by a uniform injection of the entire drum membrane. While the membrana flaccida is red and turgid, the entire membrana tensa is also reddened. If the process has continued for a few hours the posterior portion of the membrana tensa will bulge into the canal, particularly in the posterior segment. In direct contrast with this is the otoscopic appearance presented by an inflammation of the tympanic vault. In the very early stages the membrana flaccida appears greatly reddened and swollen, while the membrana tensa remains perfectly normal in color. Only rarely do we find the vessels of the manubrial plexus slightly engorged. After a few hours the upper and posterior portion of the drum membrane appears to sink downward into the canal, so as to narrow the fundus and partially obscure and hide the upper part of the membrana tensa, the portion of this structure visible still preserving its normal color. In the severe cases the displacement of the upper portion of the drum membrane, that is, of the membrana flaccida, may be so extensive as to allow a view of the lower and anterior segment of the membrana tensa only, this appearing bright and glistening and showing no evidence of inflammation.

The treatment of these conditions differs in that, while an acute catarrhal inflammation may be frequently aborted by local blood-letting in the early stages or relieved by surgical measures, if seen later, operative treatment is imperative, even in the incipiency of an inflammation of the tympanic vault. For a number of years I made an attempt to abort both forms of the disease by local blood-letting, either by means of the natural or artificial leech. At the present time I seldom resort to either of these methods, and am more and more convinced that the only safety lies in making a free incision into the inflamed tissues. If the case is one of acute catarrhal otitis where the membrana tensa is involved, except in the very earliest stage, I incise not only the membrana tympani but the tissue covering the internal tympanic wall in order to secure a complete depletion of the engorged vessels. I am not speaking of cases in which there has been an effusion of fluid into the tympanum. Here, there is no doubt as to the advisability of incision. But even before this has occurred better results will be obtained by the free use of the knife than by any milder measure. In the catarrhal form of the disease this incision should lie in the posterior segment of the drum membrane, close to its periphery, and should extend from just above the inferior pole upward to the posterior fold. As the puncture is made the knife should be carried inward until its point impinges upon the bony wall of the middle ear. It should then be carried rapidly upward to just below the posterior fold. In this way the drum membrane is freely incised for about one-fourth of its circumference. As the upward cut is made care should be taken to keep the point of the knife against the internal tympanic wall, so as to incise the overlying mucous membrane.

In the severe form of the middle ear inflammation the knife should be directed upward, backward and inward, the puncture being made just behind the short process of the malleus. The incision is then carried backward to the periphery of the bony ring, care being taken to divide the reduplications of the mucous membrane filling the tympanic vault. As the edge of the knife touches the bony ring it should be turned upward and the instrument withdrawn, the knife being kept in contact with the bone so as to incise the periosteum of the upper wall of the canal for a considerable distance. By making first a horizontal and then a vertical incision, a triangular flap is formed, allowing free drainage from the tympanic vault. Copious hemorrhage immediately follows the incision and may continue for several minutes. Frequently, after the hemorrhage has ceased, there will be a sero-sanguinolent discharge for one or two days, until the engorged vessels have unloaded themselves and resumed their normal tone. Suppuration is thus prevented, and extension to the mastoid process seldom occurs.

While the incision of the drum membrane is an operation of no great importance, a certain amount of care must be taken in performing this simple procedure. In the first place, it is absolutly necessary that the canal and membrana tympani should be thoroughly sterilized before operation. The field of operation can be rendered almost absolutely aseptic if the canal is first syringed with a warm solution of bichlorid of mercury, 1–5000. The parts are then dried with a pledget of sterilized cotton, and the walls of the meatus and the drum membrane are mopped thoroughly and as vigorously as possible by means of the cotton pledget, with an alcoholic solution of the same drug, 1–3000. As the strong alcohol of the pharmacopeia causes considerable pain when applied to the inflamed drum membrane, I usually make this solution as follows: one part of an aqueous solution of bichlorid of

mercury (1–1000) is diluted with twice its volume of alcohol. I have found that the desired asepsis can be secured by the use of this mixture, and that the pain consequent upon its application is slight.

No instrument should be introduced into the canal before it has been perfectly sterilized. This is best effected by boiling the specula, cotton holders, forceps, etc., in a 2 per cent. solution of sodium carbonate. As prolonged boiling takes the "temper" out of the delicate knives used in the operation, these should be immersed in the fluid only a short time, one minute being usually sufficient, if they have been thoroughly cleansed mechanically, before being subjected to boiling. The cotton used should also be surgically clean. Of late, I have adopted the following plan for the sterilization of the cotton mops. An ordinary wooden toothpick is dipped in liquid glue, and is then wound with surgical cotton in the ordinary manner. A large number of these cotton-tipped probes are prepared, and sterilized in the Arnold sterilizer for half an hour. After this they are wrapped up in a piece of sterilized gauze until they are required for use.

As to the knife best adapted to this operation. The old form of myringotome is practically worthless. The name myringotome is well chosen to designate the instrument. It simply makes a puncture in the membrane instead of a free incision. It is utterly impossible to secure a sharp cutting edge in a small instrument of this shape, and in many cases the point of the knife is so dull that it can only be forced through the drum membrane with difficulty. This not only increases the pain of the procedure, but renders it imperfect. I invariably use a small knife resembling, in shape, a sharp tenotome, the blade being about three-quarters of an inch in length. I always insist that these instruments shall be brought to so keen an edge that they will pass through a test drum merely by their own weight. Where the incision is to be carried outward along the superior wall of the canal, as in cases of suppuration in the tympanic vault, a rather stronger knife should be used. Here it is also more convenient to have the blade curved like the ordinary curved sharp bistoury, the length of the blade being about the same as in the instrument already described. Proper attention to the instruments renders incision of the drum membrane much less painful than it has usually been considered. In the majority of patients, general anesthesia is unnecessary.

Regarding the after-treatment of these cases, I still favor the old plan of frequent syringing. Drainage by a strip of aseptic gauze, is the ideal procedure. When the discharge is very profuse, the dressing needs to be renewed every few hours, and this is naturally, impracticable, both in hospital and private practice. I have used both methods, and find that better results are obtained if the canal is kept free from secretion by a frequent use of the syringe. The fluid employed should be either sterilized water or a weak antiseptic solution; such as a solution of bichlorid of mercury (1–5000). The medical attendant should give special instructions as to the manner of using the syringe, and see that these instructions are followed to the letter. The column of fluid introduced into the canal cleanses it from the discharge which has accumulated there, and, on account of its antiseptic properties, keeps the parts thoroughly aseptic until the ear is again cleansed. The frequency with which the syringe is to be used depends upon the amount of discharge. In infants, it is often necessary to repeat the procedure every two hours. In adults, once in three or four hours is usually sufficient. As the discharge diminishes, this interval is prolonged, and the irrigation is discontinued altogether when the discharge has ceased. It is stated by some that this plan of treatment is absolutely dangerous, and has occasionally been responsible for the unfavorable course pursued by the disease. The absurdity of such a statement is at once evident. If a patient is so ignorant that he can not carry out the syringing of the ear in the proper manner, much more mischief will follow the use of the gauze drain in the canal. I speak advisedly on this point, as my experience has been by no means small.

Very little need be said regarding the further treatment of these cases. An acute catarrhal otitis yields to treatment readily, unless the discharge is infected in the canal. In rare instances, it may be necessary to apply a solution of nitrate of silver, either to the external surface of the drum membrane, or even to the middle ear, before the vessels will regain their proper tone and allow the membrane to resume its normal condition. These cases are, however, exceptional. In acute suppurative cases, granulation tissue occasionally develops. Cauterization, either with a chromic acid bead or with a strong solution of silver nitrate, destroys this tissue completely, and restores the parts to their normal condition. When seen early, mastoid involvement seldom occurs.

17 W. 46th Street.

DISCUSSION.

Dr. RANDALL—It is but just that I should say a word as to the anatomy of the ear according to Leidy. Blake and others followed him by many years in adopting these divisions. Otologists do not realize as they should and must in surgical treatment, that the antrum is the posterior part of the tympanic cavity. The surgical treatment of the middle ear will have its proper basis only when these divisions are rightly realized.

Dr. Smith—Dr. Dench makes a distinction between catarrhal and other conditions. There may be a higher elevation of temperature and worse symptoms, but before we know what part of the tympanic cavity is inflamed, the point of incision seems to me not found.

INTRATYMPANIC SURGERY; ESPECIALLY IN CHRONIC PURULENT OTITIS MEDIA.

Presented in the Section on Laryngology and Otology at the Forty-eighth Annual Meeting of the American Medical Association, held at Philadelphia, Pa., June 1–4, 1897.

BY CHARLES HENRY BURNETT, A.M., M.D.

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My experience in intratympanic surgery has been gained in 109 operations within the drum cavity, viz.: 43 operations for the relief of chonic catarrhal deafness and tinnitus, 26 for the relief of chronic tinnitus and tympanic vertigo (Ménière's symptoms) of catarrhal origin, and 30 for the relief of chronic purulency of the middle ear. In this article, however, I shall ask your attention to brief notes of the thirty purulent cases and the operations performed for the relief of this diseased condition of the ear. In all these cases various rational routine means had been employed for their amelioration before resorting to intratympanic operations. These operations have been performed upon the etherized patient, with one exception, Case 8, in which the dangling malleus was removed like a polypus with the polypus snare. The ear has been illuminated by means of a three-candle-power electric head lamp, held on the forehead, like

the ordinary forehead mirror, and supplied by a portable storage battery of six volts.

Case 1.—Miss M. of Philadelphia, age 23, a private patient. Attic suppuration and deafness in the right ear for six years. Sole perforation in the membrana flaccida. July, 1889, excision of membrana and malleus; malleus head necrosed; no trace of incus. Cessation of discharge, regeneration of membrana and great improvement in hearing the voice, from *nil* to fifteen feet, in the course of two months.

Case 2.—Miss F. D. of Philadelphia, age 48, a private patient. Chronic attic suppuration, left ear; sole perforation in the membrana flaccida. May, 1890, excision of remnant of membrana and malleus; no trace of incus; entire cessation of discharge in twelve days; improved hearing for the voice; chorda tympani irritation (metallic taste) on side of operation for six months.

Case 3.—Helen S. of Philadelphia, age 13, private patient. Chronic suppuration of the atrium of the right ear; sole perforation in the membrana tensa. June 11, 1890, membrana and malleus excised. Internal face of membrana covered with granulations; manubrium of malleus destroyed by necrosis; discharge diminished; hearing for voice improved from one foot to six feet.

Case 4.—Mr. W. H. N. of Philadelphia, age 30, private patient. Chronic suppuration of attic and atrium; perforations in the membrana flaccida and the membrana tensa. Suddenly an attack of pain and great vertigo; increased deafness. June 17, 1890, the remnant of the membrana and the partly necrosed malleus excised. Cessation of discharge in the course of a year. Deafness unchanged; no return of vertigo.

Case 5.—Mrs. Chas. G. of Idaho, age 32, private patient. Chronic suppuration of the atrium, right ear. July 7, 1891, membrana and malleus excised; malleus handle necrosed up to short process; discharge ceased in two months; hearing for the voice greatly improved.

Case 6.—Rev. I. McC. of Massachusetts, age 37, private patient. Chronic attic suppuration; sole perforation in the membrana flaccida. September, 1891, membrana and malleus excised; a little pus found in the atrium; hearing for voice slightly improved; nearly total cessation of discharge in the course of a year.

Case 7.—Edna P. of Pennsylvania, age 11, private patient. Chronic suppuration of the atrium. Oct. 7, 1891, excision of the membrana and malleus; malleus handle eroded by necrosis; diminution of discharge; hearing for voice improved; death from diphtheria a month after the operation on the ear.

Case 8.—Grace H. of Philadelphia, age 20, private patient. Chronic suppuration of attic, aditus and atrium; total destruction of membrana flaccida and membrana tensa, excepting anterior half of latter to which the malleus was attached. The latter was seized by a polypus snare and removed without pain to the unetherized patient. Total cessation of discharge in a few weeks, until March, 1897, when I removed a small cholesteatomatous mass from the attic and aditus. The discharge has now ceased. There has never been any regeneration of the membrana in this case; hence the easy and perfect drainage in recent cholesteatomatous suppuration.

Case 9.—Miss E. G. of Maryland, age 20, private patient. Chronic suppuration of the atrium, and secondarily, of the attic; sole perforation in the membrana tensa, in the upper posterior quadrant; complicated by ozena. Removal of the membrana and the malleus, March, 1892. Hearing for voice slightly improved; discharge diminished.

Case 10.—B. B. of Philadelphia, age 12, hospital patient. Chronic suppuration of the atrium; sole perforation in the lower part of the membrana tensa; excision of the remnant of the membrana and malleus; cessation of purulency in the course of a month; improvement in hearing for voice from two feet to twenty feet for isolated words.

Case 11.—Dr. W. H. of Iowa, age 32, private patient. Chronic suppuration of attic; sole perforation in the membrana flaccida; hearing for the voice very poor; membrana and malleus excised Aug. 10, 1892; body of the incus was found adherent to the head of the malleus; stapes plainly visible and movable with probe; improvement in hearing from one foot to 15 feet for a whisper and diminution of the discharge after the operation.

Case 12.—Henry T. of England, age 30, hospital patient. Chronic suppuration of the atrium; sole perforation in the membrana tensa; excision of the membrana and malleus August 3, 1892. Deafness unchanged.

Case 13.—Miss Edith H. of Pennsylvania, age 16, private patient. Chronic purulent otitis media in the left ear for five years; no tinnitus; voice heard four feet; scanty offensive discharge; large posterior perforation in the membrana flaccida; malleus head and neck exposed; Nov. 30, 1892, I enlarged the perforation downward; atrium and attic found in free communication; cholesteatomatous mass as large as a pea removed from aditus after horseshoe incision about the manubrium; the latter was seized at the short process, with delicate foreign body forceps and removed alone as it was already detached by necrosis from the malleus neck; malleus neck and head found adherent to the inner surface of the scute of the squama; when removed with hook, the body of the incus was found adherent to malleus head by means of dense fibrous bands; hearing for the voice improved at once from four feet to ten feet; the discharge diminished in six months, but did not cease entirely; case withdrawn from treatment thereafter.

Case 14.—Harry P. of Philadelphia, age 9, private patient. Chronic purulent otitis media, right side, for several years; large posterior perforation in the membrana tympani with protruding polypi; Jan. 3, 1893, enlarged the perforation upward and backward; removed two polypi from region of aditus with an incus hook; after this clearance a central perforation was found in the membrana flaccida hitherto unseen and undiscoverable by a probe because of patient's great sensitiveness to touch in this region. Ligaments of malleus cut and bone removed; then the isolated long process of the incus was hooked out with the incus-hook; nearly the entire head of malleus had been destroyed by necrosis; its neck and short process were covered with fibrous bands.

This case has slowly grown better under the use of alcohol instillations and syringings. The only gain seems to be better drainage from the attic and antrum and within a year almost entire freedom from formation of polypi in the posterior part of the atrium.

Case 15.—Mrs. P. of Philadelphia, age 40, private patient. Chronic purulent otitis media in the left ear; neoplastic diaphragm with central perforation; no trace of malleus; excision of neoplastic membrana near annulus tympanicus; no trace of incus; stapes in position; cessation of discharge; improvement in hearing for the voice from one foot to six feet; regeneration of membrana without perforation in two months; remains well at present time.

Case 16.—Feb. 16, 1894; Charles M, age 15, private patient. Chronic purulent otorrhea, left ear, for many years; parents died of phthisis. Excision of thickened membrane and necrotic malleus; head of latter half destroyed; no incus found; attic filled with synechiæ and cholesteatomatous débris; lessening of discharge and improved condition of attic. Deafness unchanged.

Case 17.—March 7, 1894; Walter S., age 20, hospital patient. Copious chronic purulent discharge from the right attic and atrium; under ether removed two polypi and remnant of malleus; head of latter and part of the neck entirely eroded; nearly total cessation of discharge in a month; patient soon passed from observation.

Case 18.—March 16, 1894; Mrs. P. of New York, age 47, private patient. Chronic purulent discharge from left ear with large perforation in membrana flaccida; membrana tensa and manubrium intact and forming a pocket for pus; excision followed by entire cessation of inflammation and discharge in a year and a half. Deafness unchanged.

Case 19.—Oct. 15, 1894; Mrs. A. K., age 21, private patient. Chronic purulent otorrhea since childhood; attic and aditus involved; membrana destroyed; malleus and incus bound together by synechiæ; excised under ether; small cholesteatoma removed; hearing for the voice improved at once; total cessation of discharge in two months after operation; result has remained permanent.

Case 20.—Nov. 2, 1894; A. M., age 17, a negro, hospital patient. Chronic purulency of attic and atrium; hearing for voice two feet; large polypus removed from the right ear under ether; nearly total cessation of discharge in two months. Hearing unchanged.

Case 21.—Nov. 2, 1894; left ear of the above named patient. similar lesions; hearing for voice two feet; in the same etherization removed remnant of malleus imbedded in polypoid membrana; nearly total cessation in two months. Hearing unchanged.

Case 22.—Nov. 12, 1894; P. N., age 13, hospital patient. Chronic otorrhea, right ear, for four years; mastoid operation by another surgeon several years previous to my first inspection of case; continuance of otorrhea; membrana largely perforated; hearing on contact; under ether, excision of diseased membrana and malleus; total and permanent cessation of discharge in two weeks after operation. Hearing unchanged.

Case 23.—March 6, 1895; boy 6 years old, hospital patient. Chronic otorrhea, right ear, for some years; excision of membrana and malleus; large perforation through upper posterior wall of auditory canal into antrum large cholesteatomatous

masses removed from attic and antrum; finally opened the mastoid cells to tip of process and removed foul débris from mastoid cavity, lying below line of perforation in canal wall into the antrum; entire recovery in a month; no record of hearing.

Case 24.—June 27, 1895; Mr. F. L., age 40, private patient. Chronic otorrhea, right ear, all his life; remnant of membrana retracted and malleus drawn up into empty attic; sole perforation in the membrana tensa; no incus visible; excision of membrana and malleus; latter eroded at tip of handle and rough over entire surface; total cessation of discharge in two months; hearing for the voice improved.

Case 25.—Feb. 29, 1896; Lizzie B., age 21, hospital patient. Chronic suppuration of the attic; complains of tinnitus and vertigo; large perforation in the membrana flaccida; neck of malleus visible; membrana tensa drawn inward; excision of remnant of membrana and malleus; head of latter destroyed; no incus found; cessation of discharge in a month and relief of vertigo; hearing unchanged.

Case 26.—Oct. 20, 1896; Miss G. of Massachusetts, age 40, private patient. Chronic attic suppuration for years; excision of adherent and partly necrosed malleus; cessation of discharge and improvement in hearing for the voice from one foot to six feet.

Case 27.—Nov. 27, 1896; Master A., age 17, private patient. Chronic attic suppuration for several years; large perforation in membrana flaccida; excison of membrana tensa and the manubrium of the malleus, which had formed the outer wall of a pus pocket; cavity of tympanum filled with granulations; nearly total cessation of discharge in four months under alcohol and acetanilid; deafness unchanged as yet.

Case 28.—Dec. 10, 1896; Mrs. F., age 40, private patient. Chronic attic suppuration for years in the left ear; perforation in membrana flaccida both behind and in front of short process: membrana tensa and handle of malleus removed. Marked lessening of discharge; deafness unchanged.

Case 29.—Dec. 29, 1896; Mr. M. J. K., age 30, private patient. Chronic attic suppuration after typhoid fever six years previous. Excision of membrana tensa and handle of the hammer; atrium free from disease; copious discharge from region of attic and aditus; lessening of discharge up to present time; deafness unchanged as yet.

Case 30.—March 27, 1897; Louis L., age 16, private patient. Chronic attic suppuration for eight years; large perforation into attic and aditus; membrana tensa and handle of malleus intact; scanty, thick and offensive discharge from attic; excision of membrana and manubrium; head of hammer eroded; atrium free from disease; bichlorid syringing for four weeks and then an alcoholic solution of acetanilid to May 10, when discharge ceased.

Total cessation of discharge occurred in fifteen cases, marked diminution in seven, and diminution simply in eight. Total cessation of discharge occurred five times within two months, three times in one month; four times in two weeks, and once in a year and once in a year and a half. In the cases tabulated as "marked diminution" the favorable change took place promptly. The ultimate results in several cases are not known to me as they have passed from observation, while two are still under treatment as they have been recently operated upon and it is hoped they will be added soon to the list of totally cured. In those tabulated as simply "diminished discharge," two have recently been operated upon and are still under treatment.

The physical appearances in all cases have improved even when the discharge has not ceased. Granulations have ceased to form, and the discharge has become more mucous than purulent. The hearing improved in eighteen cases, was unchanged in eleven, in which the atrium was the principal seat of disease, and in one case, that of a child of 6, the hearing was unrecorded. The attic alone was affected in nine, the atrium alone in seven, and the attic and atrium together in fourteen cases. Marked ear vertigo was present in Cases 4, and 25; it was due in Case 4, in my opinion, to an irruption of the chronic purulency into the vestibule, through the foot-plate of the stapes. This was demonstrated by the total deafness to all tests, in this ear after the cessation of inflammation and discharge. In Case 25, the ear vertigo was due to irritation about the stapes. In no instance has the stapes been resected or removed.

Alcohol instillations or alcoholic solutions of boric acid or acetanilid have proved most efficient in after treatment, as long as any signs of granulations were present. After these had ceased to form and the mucous membrane had become smooth, a solution of carbolic acid (2½ per cent.) or a solution of bichlorid (1–6000) acted best. In some instances when the discharge had become slight, simply mopping the fundus of the canal with absorbent cotton slightly singed seemed to perfect the cure. Case 14, has proved to be the most obstinate I have encountered; however, under the use of alcohol syringing at home, and alcohol moppings at my hand, granulations and small polypi have ceased to form in the attic and aditus. While preparing this article, Case 8 has had a recurrence of pain in her ear followed by the detachment of a lamellated mass of epithelium from the attic. The fundus is again entirely free from granulations and nearly dry under bichlorid mopping at my hand. When total cessation has occurred we may conclude that the disease was limited to the drum cavity and possibly the aditus. In those cases where the discharge has not materially lessened we may conclude that parts deeper in the mastoid have been and are still affected; perhaps less, however, than before drainage and antisepsis were improved by the operation. No case has been made worse by the operation, not even temporarily. Simply long continuance of the otorrhea in any of the cases noted above would justify a consideration of exposure of the middle ear cavities through the mastoid, as would also any appearance of so-called mastoid symptoms, which not one of them has shown since the operation on the drum cavity. The latter fact I think proves conclusively that so-called "excision" in chronic purulency of the ear by perfecting drainage from the attic and antrum, and facilitating antisepsis of these parts, tends to ward-off mastoid caries, sinus-phlebitis, cerebral abscess and pyemia, and should therefore precede any operation on or through the mastoid simply for the cure of chronic purulency of the middle ear spaces, especially in the absence of any urgent symptoms of mastoid necrosis and pain.

Certainly mastoid trepanation for the cure of chronic purulency of the middle ear will not succeed if the diseased tissues are not removed from the drum cavity at the same time, whereas purulency from the middle ear which has continued after a mastoid trepanation without excision of the diseased middle ear structures, will cease as soon as the latter operation is performed, as exemplified in case 22.

The hearing has been improved in fifteen cases, unaltered in ten, and in five instances it has been unrecorded. Among the cases of unaltered hearing are four recently operated upon; it is hoped they may be finally classed with those improved in hearing. Improvement in hearing has occurred seven times in which the attic alone was affected; six times in which the atrium alone was affected, and twice in instances of disease of both attic and atrium.

127 South 18th Street.

Let us defeat the Antivivisection Bill!

SOCIETY PROCEEDINGS.

The San Francisco Medico-Chirurgical Society.

Regular Meeting Feb. 7, 1898.

President, F. B. CARPENTER, M.D., in the chair.

After the transaction of routine business, Dr. CLINTON CUSHING read a paper on the subject of

CHOLELIATHIASIS

entitled a "Report of Two Cases of Cholecystectomy," in which paper the technique of the work was the main feature.

Dr. L. C. LANE—I saw the operation in the first case. It was extremely difficult. The gall bladder was small and adherent to the liver. It tore somewhat in being severed from the attachment. The bleeding was hard to control also, but it was finally stopped by making a large black eschar with the thermal cautery. The man is now well. There was no rise of temperature after the operation. The diagnosis was in doubt—the case had the appearance seen in malignant disease; and the pain seemed characteristic of it. The physician who first saw the case, diagnosed cancer of the liver. My experience is that you know more about that, when you cut in and see. The pain is probably the most intense of any disease. The mucous membrane of the gall bladder is in folds, and is similar in arrangement to the Archimedean screw. This is claimed by some to be a means of facilitating the passage of bile.

Dr. J. O. HIRSCHFELDER—In the case described it would seem impossible to make a diagnosis; the atrophy of the gall bladder, and the absence of icterus lead to confused ideas, and the sallow look of the patient would also have a tendency to lead me astray. But the typical cases present no difficulty in diagnosis. Internal abdominal pains, mainly in the right hypogastrium, but not clearly localized. (A cause of pain in the right side may produce pain in the left.) The characteristic symptoms is icterus, coming on about or within twelve hours after the onset of pain. No other condition will produce icterus so rapidly, and the reason is that on account of obstruction, pressure in the gall bladder rises and forces a more rapid absorption of bile into the blood. Between the attacks, sometimes, by palpation the stone may, but not often, be felt. The stone may not be found in the stools until four or five days after the pain ceases. I direct that the contents of the chamber pot be mixed with water, then well stirred and thrown upon an ordinary flour seive, and held under a running stream of water until all the material has been washed through, when the stones, if present, may be collected. If but one is found, and it is triangular in shape there are probably others not yet discharged from the intestine. In one week I have collected from a single patient fifty-six such stones.

The treatment need not necessarily be surgical. The object of treatment should be two fold: 1, increase the secretion of bile by administration of benzoates and salicylates; 2, induce contraction of the gall bladder if possible by administration of pilocarpin; by employing deep massage; by giving the faradic current with slow interruptions. I have seen results of value with the latter method.

Dr. G. R. HUBBELL—Some time ago a patient came to me, complaining of vomiting and pain in the abdomen immediately after eating. There were no other symptoms and the only sign was a tumor in the region of the pylorus. Examination of the stomach contents showed a full stomach seven hours after eating. The percentage of HCl was normal. Diagnosis was made of tumor of the pylorus. At the operation a stone was found in the common bile duct, but not closing it. The wall of the gall bladder was greatly hypertrophied and the stone had to be dissected out of the duct.

Dr. E. RIXFORD—In Dr. Hubbell's case, it was easy to pass a probe into the duct and reach the stone, but it could not be moved. By placing a finger in the foramen of Winslow and lifting up, the stone was dug out of the wall of the duct in which it was imbedded. The duct was closed with Lembert sutures. There was incessant hiccough for five or six days but otherwise no trouble during convalescence.

Dr. L. C. LANE—In 1854, when an interne, a woman came into my ward with a tumor of the liver. It was, in accordance with approved practice at that time, poulticed and finally opened, when a gall stone the size of a pigeon's egg was evacuated. After about three months the woman began to improve leaving behind her a legacy of gall stones amounting to nearly one hundred at the time she was discharged.

Dr. CUSHING—The study of this class of cases has proven to me three things of importance:

1. The pain is not so much in the region of the gall bladder, as in the abdomen generally.

2. The gall bladder is not necessary to the life of the individual, although Bouchard says we secrete as much bile as urine.

3. When there is an inflamed and ulcerating gall bladder we may have have a low continued fever lasting for months.

Dr. C. J. CROSS—Will the X-ray reveal the presence of gall stones?

Dr. RIXFORD—In Dr. Hubbell's case it did not. Gall stones are organic. In the radiograph the liver makes a deep shadow, the spine shows well above and below, but the site of the stones can not be distinguished from the liver shadow.

Dr. CARPENTER—I have tried to get a plate by having the rays obliquely arranged so as to have as little liver substance as possible intervening, but the results were failures to locate the stones although they were found present at the operations.

Gall stones placed on the outside of the body did not show any shadow.

EXCISION OF THE TONGUE AT THE THYROID.

Dr. E. RIXFORD presented a patient whose tongue had been removed at the hyoid bone for malignant disease. Kocher's method had been used. Its advantage is the wide field opened by the incisions. A preliminary tracheotomy had been performed, followed by the ligation of the lingual arteries on both sides. A very little sloughing had followed the operation.

PULMONARY TUBERCULOSIS.

Dr. RIXFORD—I also report a case of pulmonary tuberculosis cured with oxytuberculin. The lady is very enthusiastic over the remedy of Dr. Hirschfelder, but did not wish to come to the society. The patient is a lady about 30 years of age. Several members of the family have died from tuberculosis. In 1896 she nursed her sister who died from this disease. The girl was sick about three months only. It was one of the most rapid cases I have ever seen. Soon afterward this patient became ill and came to me in April, 1897. This note was made at the time: "Both apices slightly dull: bronchial breathing in both; coughing is constant; night sweats; exhausted; gradually losing weight; temperature 99 to 101; sputum large amount and swarming with bacilli. I prescribed creasote and whisky. At the time I wanted her to submit to Dr. Hirschfelder's remedy, but she declined. She went to Auburn, on the American River, and stayed a number of months, gradually gaining strength and health. In October last she returned to San Francisco.

Her coughing, however, was very severe; sputum contained pus, but although I examined it three times, found no bacilli. Night sweats were still present and she complained of great shortness of breath. Although she was considerably improved she began the treatment with oxytuberculin, beginning with injections of 3 centimeters and gradually increasing to 10; in all she has used 500 cubic centimeters. She soon began to improve; in two weeks she noticed that her cough was less; in December there was no sputum whatever. By January 1 she had no cough, no night sweats and could run up stairs and take long walks. Recently she walked ten miles. January 16 the injections were stopped and she was discharged as cured.

I think it right that all such cases treated by this remedy should be reported, those that improve and those that do not, in order that we may add to the clinical experience with this remedy. This was a case not very far advanced, but with tuberculosis in the family history the chances of recovery were against her. There has been no return of symptoms to this time.

Dr. G. R. HUBBELL—I wish to report four cases treated with oxytuberculin which are much improved.

Case 1.—Mrs. M. D., age 43, came to my office Nov. 13, 1897. No family history of phthisis. Patient caught cold in January, 1895; since then has been coughing and expectorating. From March until January, 1896, had night sweats—none since; she has had several small hemorrhages and is short of breath on the least exertion; vomits every morning. Weight in health is 135 pounds; at present, 112. On physical examination the right apex was flat to the fourth dorsal vertebra; in the left to the third; anteriorily, the right was flat to the second rib and the left to the third. There was amphoric respiration and bubbling râles of both apices. The sputum contained a large number of the bacilli of tuberculosis. Temperature was, A.M., 100; P.M., 103. Treatment with oxytuberculin was commenced at once in daily injections of 10 c.c. At the end of a week the temperature was, A.M., 99; P.M., 102. She was able to walk up two flights of stairs without stopping, which she could not do when she began treatment; her cough is better and expectoration less; she retained her food without any discomfort. She returned to her home and I heard nothing further of her.

Case 2.—Miss J. R., age 30, who came to me November 9, 1897, gave the following history: One maternal aunt died

of phthisis. One sister died of what was called consumption of the bowels. Patient had the usual diseases of childhood; was otherwise well until December, 1896, when she caught cold and began to cough; this has continued since and has been attended with profuse expectoration, blood-tinged at one time. In April patient had night sweats. At present she has dyspnea on exertion. Physical examination: Patient is poorly developed, illy nourished and pale; cervical glands slightly enlarged; thorax is moderately long, broad, moderately arched, deep; both supra- and infra-clavicular fossæ are sunken; left side moves more than the right; flatness of the right apex posteriorly to the third dorsal vertebra; flatness of the left apex posteriorly to the second dorsal vertebra; flatness of the right apex anteriorly to the second rib; flatness of the left apex anteriorly to the second rib; amphoric respiration of the right apex with consonant râles; bronchial breathing at the left apex; râles in various parts of the right lung; otherwise the physical examination was negative. Sputum contained a large number of bacilli of tuberculosis. Temperature, A.M., 100; P.M., 102. Since November 9 she has had daily injections of 10 c.c. oxytuberculin. At present she is working nine hours a day; coughs and expectorates very little; has gained one pound in weight; her temperature is normal and she says that she feels well.

Case 3.—Miss H. L., age 20. I first saw the patient April 12, 1897. One sister died of phthisis. Patient was well until three months ago, when she caught cold and has been coughing and expectorating since. Her weight in health was 138 pounds; April 12 it was 127. Physical examination: Patient is well developed, well nourished but pale. Thorax well formed; left side moves slightly more than the right on deep respiration; there is dulness of the right apex to the second dorsal vertebra, posteriorly; anterior, to the clavicle; dulness of the uppermost portion of the left apex; bronchial inspiration and expiration at the left apex; sputum contains a large number of bacilli; temperature. A.M., 100; P.M., 102.4. For a month she received daily injections of 10 c.c. of oxytuberculin. At the end of that time her cough and expectoration had diminished; her night sweats ceased and she felt well enough to discontinue treatment.

Case 4.—Mrs. R. M., age 43. No heredity. Patient was well as a girl, but would always take cold easily. In June, 1892, she came to this city and took a room previously occupied for a number of years by a tubercular patient. The house was very dirty and required much cleaning and sweeping. Nov. 13, 1892, she gave birth to her first child; three weeks later night sweats commenced and about six weeks after that she began to cough and expectorate. She gained in weight subsequently, but cough continued off and on until three weeks ago, since which time it has been much worse and attended with profuse expectoration, pain in the right side and chest and dyspnea. Physical examination: Patient is moderately developed, well nourished, but slightly cyanotic. Cervical glands are slightly enlarged, thorax is moderately long, broad, moderately arched, deep; right side moves slightly less than the left; there is dulness of the right apex, posteriorly, to the second dorsal vertebra, of the left to the first; dulness of both, anteriorly, to the clavicle. Over the anterior part of the chest the percussion note is hyperresonant. The upper border of the liver dulness is at the seventh rib and the lower border of the lung moves but little on deep respiration; bronchial respiration of both apices with mucous râles; over other parts of the lungs the expiration is somewhat prolonged and over the right lung numerous râles are heard, with a faint friction sound over the lower lobe. The sputum contains a large number of bacilli: Temperature, A.M., 99; P.M., 100. For about three weeks she has had daily injections of 10 c.c. of oxytuberculin. In the beginning she raised sixteen ounces of sputum in twenty-four hours; at present she coughs a little in the morning and occasionally during the day and raises about one and a half ounces in twenty-four hours. She has gained six and one-half pounds in weight and is not short of breath on exertion; she ran four blocks without the slightest discomfort.

In passing, I will mention another patient who was far advanced in consumption, being confined to her bed and short of breath even when at rest. At the urgent solicitation of her friends and relatives and against my wishes I treated her. Improvement is marked, her color is much better and two days ago she was able to go down town.

All the cases here reported had been treated with the usual remedies for phthisis—creosote and cod liver oil without any benefit therefrom; these were not discontinued. With the exception of one case all were well advanced and yet all improved and two are well on the road to recovery. I have had the satisfaction of observing cases cured by the use of oxytuberculin and not only was the cure absolute, but none so far have relapsed. In the so-called cures with creosote and various other remedies that I have examined, there remained some faint trace of the disease, but after cure with oxytuberculin all pathologic breath sounds disappear.

Dr. C. N. ELLENWOOD—I will report a case that I have treated for eleven weeks; a girl 27 or 28 years of age who came to me Nov. 16, 1897, in the fourth stage according to Dr. Hirschfelder's classification (dyspneic at rest). She had hemorrhages with persistent coughing and profuse expectoration and this had existed for about two years. She had been a delicate girl through childhood; menstruation had been irregular and none at all for the past six or seven years; she was emaciated and weighed about 100 pounds. The left lung much flattened and contained a large cavity; vesicular murmur heard only at base; right lung dull at apex; vesicular murmurs inaudible. The sputum was loaded with bacilli. I commenced with the daily injections of 4 c.c., increasing it gradually to 11. She has had these daily now for eleven weeks. In the beginning she had to be aided in ascending a flight of stairs, while now she walks up readily. She walks fifteen blocks easily. Her cough has disappeared for the most part, coughing only at intervals of four and five days. She has an expectoration of probably one-half ounce of sputum in the morning during the occurrence of coughing. The left lung is entirely flattened and there is an immense cavity. Her night sweats have disappeared for the most part; her complexion has wonderfully improved; this was observed after the first ten days; her appetite has also improved; she relishes her food and eats three or four times as much as before the treatment was commenced. There is marked improvement in the respiratory function. The right lung is the one she breathes with for the most part; very little action takes place in the left, yet respiration is becoming more and more prolonged. Her weight has fluctuated very materially, but still she weighs more than when she began; she is cheerful now, while before she was despondent. All in all she is very much improved by the oxytuberculin treatment. The bacilli have not disappeared, although they have diminished notably. I know of nothing else that would have given as great relief to this advanced case.

Dr. LANE—In my cases and those which I have observed, I have seen no abscess or any considerable pain beyond the simple puncture of the skin by the needle; sometimes a slight pain is complained of, but by massage upon the point of injection that disappears. I have not seen the inconvenience from the puncture that some have complained of.

Dr. WILLIAM FITCH CHENEY—I have treated several cases with oxytuberculin, and one of these in particular has given positive proof of improved condition. He was well advanced in tuberculosis, with the upper third of one lung gone, bacilli in the sputum, and the patient in a pitiable condition. He had had tuberculosis for two or three years and had been under treatment by some of our well known physicians by the usual methods, the last treatment being creosote in large doses. This man began treatment with oxytuberculin in doses of 3 c.c., gradually increasing to 20. At the expiration of a month he had less dyspnea. His expectorations were easier and he was generally improved. I was not much encouraged by the improvement; furthermore, I wanted to make a test of the treatment and find out what had helped him. I then gave him codein for the cough and a mixture of cod liver oil, and told him to go a week without oxytuberculin. During that week he was not doing as well as before; still I was not satisfied, and would not put him back upon the other treatment. In three days more he returned and said that he must have oxytuberculin or he thought he would die. He was becoming very despondent; was coughing almost constantly, and at his urgent request I returned to the original treatment. Within a week he was much better. He now sleeps all night and can walk about town without the exhaustion he formerly had. I can not think that man can be made well, but he has been made comfortable. He was treated ten days with other medicines and was anything but improved till oxytuberculin was resumed.

Dr. HIRSCHFELDER—I have made distinct claims for oxytuberculin only in the first and second stages, before there is any shortness of breath on exertion; but, as these gentlemen have found, so I find in very advanced cases marked improvements occurring, and in some complete recovery from all symptoms, disappearance of the bacilli from the sputum and the return of the patient to perfect health. Where cavities are present they do not disappear but become smoother walled. In some cases the bacilli have disappeared from the sputum; the patient has lost the fever; strength has returned; there has been a gain in weight and results have been shown such as we might expect from iodid of potassium in syphilis. I might cite many confirmatory cases, but I will merely call attention to a striking

case illustrating what may be done in a field heretofore most disappointing:

J. A., aged 34, a tailor, was admitted to the City and County Hospital July 15, 1897, with the diagnosis of acute miliary tuberculosis. Dulness of the right apex to the second dorsal vertebra with bronchial respiration was found. The sputum contained large numbers of bacilli of tuberculosis. The urine, 32 ounces in quantity, with a specific gravity of 1016, was bloody and contained abundant tubercle in groups. The patient reported that he had been taken sick one week before and that he had been taken short of breath and weak. He was found to have general anasarca. His fever was high, ranging to 104 degrees. Injections of oxytuberculin were given and a rapid improvement in his condition took place. August 12 he reported that he felt better and thought he could breathe easier. His appearance was brighter. The edema soon disappeared. August 17 he got up and walked about the ward. The urine no longer contained blood nor bacilli, but the picric acid test showed a slight deposit. The fever had become lower, and September 10 the temperature became normal. Since November 14 there has been absolutely no elevation of temperature. The weight of the patient has risen from 133 pounds on August 28 to his present weight of 149 pounds. No bacilli of tuberculosis have been found in the sputum since December 30, and for two months past there has been absolutely no cough. Examination of the lungs fails to reveal the slightest sign of trouble. The urine is clear, although with Esbach's fluid a trace of albumin can be found. The patient's appearance is that of ruddy health, and he may be considered a case of cured miliary tuberculosis.

Denver and Arapahoe Medical Society.

Meeting of February 21, 1898.

THE DIAGNOSIS AND TREATMENT OF HEADACHES

was the subject for discussion. Dr. H. T. PERSHING divided the various kinds of headache into groups, taking into consideration the practical convenience in every-day diagnosis: 1. Headache due to organic disease—meningeal hemorrhage, optic neuritis, myelitis, encephalitis, abscess, tumor, chronic meningitis. 2. Headache due to diseased blood vessels, arteriosclerosis, syphilitic endocarditis. 3. Due to causes outside of brain, membranes or vessels, as migraine, infectious fever, diabetes, uremia, uric acid diathesis, alcoholism, indigestion, plumbism, active or passive hyperemia, anemia, eye-strain, nasal headache, dental headache, neurasthenia and hysteria.

In treating headache due to syphilitic infection, mercury and potassium iodid should be administered, even in cases where the infection is at all doubtful. Arteriosclerosis calls glonoin in gradually increased doses to lower blood tension and for small doses of potassium iodid. Migraine is a very obstinate disease. Morbid conditions of the eye, nose, teeth, stomach or pelvic organs should be corrected, not with the view that they cause the disease, but because they irritate and exhaust the patient who is already sufficiently afflicted. The nerve treatment should be carried on during the intervals. Cannabis indica is more nearly a specific than any other drug. Beginning with one-twelfth of a grain of Herring's extract three times daily, the dose should be increased to the limits of easy toleration. The antipyretics may succeed for a few times but the dose must be rapidly increased and they soon fail to give substantial relief. The best treatment during an attack he considers to be codein and caffein. In headache due to the uric acid diathesis, the diet should be regulated. Starch should be interdicted. He has seen many cases of habitual headache permanently cured by abstinence from all forms of mush and porridge. The salicylates are as truly specific as potassium iodid, for syphilis. No antipyretics should be given in cases of neurasthenia or hysteria. The persistent use will make the general condition worse. As a sedative opium and cannabis should be administered. Iron is of use, if the hemoglobin is reduced. Mineral acids seldom do good and often do harm. In cases of extreme weakness, the rest-cure as systematized by Weir Mitchell, is of the greatest value. There can, however, be no doubt that his success is due to his personal power of controlling and happily directing the mental state of his patients. A physician who does not possess these qualities will very likely fail with the rest cure. The mental treatment of such patients is an art full of difficulties. Complete reassurance after a thorough examination is the first and most important step in a well considered course of treatment. The patient must be taught to avoid talking of sickness, and to persevere in trying to crowd out the depressing thoughts.

Dr. MCLAUTHLIN said that the majority of headaches are due to derangements of the alimentary canal, the headache being frontal and interocular tension present. The treatment should be the old reliable calomel. He does not feel that we have in the salicylate a specific in cases of uric acid diathesis. We succeed very often only to upset the stomach of our patient. In the headache of typhoid fever, quinin and alcohol should be avoided as they only increase the trouble. In chronic heart disease, aortic or mitral insufficiency, nitroglycerin will be found of advantage.

Dr. LEVY spoke of the anatomy and physiology of the nose and the adjacent structures and showed how intrinsically they are connected, and therefore there is no wonder that in many cases the headache is traced to some derangement of the nasal passages or sinuses. He divided the pathologic causes into three groups, pressure, atrophy and diseases of the accessory sinuses. The atrophy which is an opposite condition to that of pressure, causes the headache by allowing the air to enter the lungs insufficiently warmed. The headache of the sphenoid sinus is quite distinct from those of the ethmoid and the antrum, the pain being localized at the center of the head and behind the eyes.

Dr. FOSTER discussed headache from the ophthalmologic standpoint. The weakened muscles without any organic trouble is a cause for headache. Hypermetropia, myopia, presbyopia and astigmatism were considered with reference to the one symptom of headache; glaucoma without special symptoms should not be overlooked.

Dr. AXTELL spoke of the headaches due to kidney diseases. He said they were uremic, and that but few escape headache some time in their course. In any cases of migraine occurring after middle life, granular kidney should be suspected. The cause of the headache is to be found in the retention of excrementitious matters, plus thickening of the dura and pia in contracted kidney. The treatment was elimination.

Dr. JAYNE took exception to the views of Dr. Pershing, who does not consider pelvic troubles causes of headache. He cited many cases which have been entirely cured from severe headaches by correcting the abnormalities in the pelvic region. He does not see any reason why the nose, the ear, the teeth should differ from pelvic organs in the causation of headache.

Dr. WARNER spoke from the stomatologist's standpoint, and dwelt upon diseased pulp as a cause of headache.

Dr. ROTHWELL added from the leaves of his experience the headaches due to concussion where no organic trouble is perceptible, and chronic ossific meningitis. He touched upon the question whether the pain is located in the brain or in the meninges.

Dr. HOPKINS considers that 90 per cent. of all cases are due to gastro intestinal derangement. In his experience he found headaches traceable to syphilis, which occurred early in the morning and were mistaken for gastric headache.

Dr. STOVER mentioned the headaches due to disease of the rectum. He advocated static electricity as a therapeutic measure in headache not due to organic lesions.

Dr. SPIVAK reported a case of headache which was apparently due to an elongated uvula, the amputation of which relieved the patient.

Dr. PERSHING, in closing the discussion, said that the difference of opinion between himself and Dr. Jayne lay in the pathology, but not in the treatment. Those who suffer from pelvic trouble are as a rule suffering at the same time from anemia and hysteria, and Dr. Jayne's cases can be explained on this ground. Besides, headaches are in a certain measure amenable to suggestive treatment. In many cases applications in the vagina or clipping the uvula are nothing else but suggestive treatment.

Drs. J. N. HALE and H. L. TAYLOR reported a case of partial dislocation of the occipito-atlantal articulation. A well-developed man, 26 years old, five feet ten inches high, weighing about 160 pounds, was lightly struck in the face and fell backward, striking his head upon the rail at the base of the bar at which he was drinking. He was dead before the arrival of the physicians. The postmortem showed, underneath the pia, much clotted blood. The brain was normal. The movement of the atlas by the finger inserted into the foramen magnum could be easily felt by the fingers applied posteriorly to the neck. There was no fracture. A ragged tear three-fourths of an inch long existed in the tissues binding the occipital bone to the atlas, and the right vertebral artery was entirely torn across just below the entrance to the cavity of the skull. Such cases are of extreme rarity, and only four cases are on record, those of Lassus, Palatta, Ballisson and Lariste.

Meeting of March 8, 1898.

THE RELATION OF WATER TO TYPHOID FEVER

was the subject at this meeting. The speaker of the evening,

Col. J. W. Hill, E.C., of Cincinnati, said in part: "The best informed sanitarians of Germany are firm believers in the water transmission of certain diseases, chief of which are typhoid fever and cholera, and visitors from the United States to that country who may be interested in the hygiene of water are reminded of the fact that in certain cities of Germany where the water supplies are known to be of very excellent qualities, typhoid fever is scarcely known. Dr. William Osler of the Johns Hopkins University, Baltimore, is authority for the statement that typhoid fever is so rare in Munich that enough cases can not be had to illustrate the disease in the hospital clinics. Unfortunately, no large city in the United States can boast of a lack of typhoid fever. Epidemics of typhoid have been traced to polluted water, but they are more often traced to some other dietetic substance, such as milk, oysters, water cress, etc., but in nearly every instance the source of the infection is something that has acquired its virulence from water or sewage. It is possible that the typhoid bacillus and other bacteria of sewage origin may survive for a length of time in a sewage polluted soil, but is antagonistic to our general knowledge of this and the bacilli of nitrification to suppose that two organisms of such opposite tendencies could survive in a soil where vegetation was in progress. A sodden sewage-polluted soil might be too rank for the nitrifying bacteria and at the same time furnish favorable ground for some of the bacteria of sewage origin, among which may be found b. typhosus and b. coli communis. A theory propounded, but unfortunately not expanded fully by Prof. E. Ray Lankester of Oxford University has suggested the probability that the typic typhoid bacillus has no independent existence outside of the animal body, and the colon bacillus upon the introduction into the human system becomes transformed into the conventional organism which we occasionally find in the spleen of a typhoid subject. In other words, the typhoid bacillus is an exacerbated form of b. coli communis. He points to the fact that the colon bacillus is of frequent occurrence in water used for domestic purposes, while the typhoid organism has been very rarely, if ever, found in water, and argues that a disease so prevalent as typhoid fever must have its cause in an organism better known than the typic germ of Eberth, and that that organism, in his opinion, is bacillus coli communis. The evidence to shake our belief in the water transmission of this disease is very meager, while upon the other hand, in cities like Munich, where a very excellent water supply has been substituted for a supply known to be polluted by sewage, the typhoid fever rates have quickly fallen to a small percentage of those which prevailed before. These reductions, simply by changes in the character of the water-supply to a city, have been so great as 85 to 90 per cent., and even if the remaining typhoid can not be charged to water, it is obvious that water is responsible for the larger percentage of the cases and death rates from this disease. The colon bacillus is always in the human intestine, and if it is the primary form of the typic typhoid germ, why is it necessary to look for its origin in water? The cities of Germany are extremely solicitous about their water-supplies and of a list of 121 but one, Riga, depends wholly, and one, Frankfort, partly upon unfiltered river water. Of a total population in these cities of 13,607,000, nearly 98 per cent. either obtain their public water supplies from unexceptional sources or rely upon slow sand filtration to properly purify such water, and it is not known that the sources of the other 2 per cent. of this large population are of questionable quality. Filtration among the Germans is not limited to turbid and polluted waters like those of the Elbe and the Maas, but is applied to comparatively pure water like that of Lake Zurich and to what we would regard as very pure water, like that of the wells sunk in the sand dunes at Amsterdam and The Hague. Some people take comfort in the fact that the typhoid bacillus is not a water bacillus and can not survive in water for an indefinite or even a great length of time. It can not certainly exist in water for more than a short period, but it is capable of doing great damage even during these brief intervals of time. We might contend that the cause of typhoid fever and other so-called water-borne diseases is not certainly known, but it would be unsafe to assume that water in some undefined manner is not concerned in spreading these diseases. The fact confronts us, that with a marked improvement in the quality of a public water-supply, there is a lowering of the typhoid fever rates, and so well grounded is the belief that water is the chief agent in transmitting the organism of this and several other diseases that most investigators have abandoned search for the cause and are directing their energies toward methods of prevention. Every year a withering blast sweeps over the land, and in its wake lie thousands of human victims and tens of thousands of shattered systems. The malignity of this stalking specter may be greater one year than another, but its purpose never changes; human life is its constant prey and the flower of the land its choicest morsels. It is in our power to temper the blast and protect humanity from at least 85 per cent. of its ravages by remedies so simple that a child can understand them. Shall we do it?"

After the close of the lecture Colonel Hill illustrated by excellent stereopticon views three modes of water filtration: 1, The so-called continuous sand filter as exemplified in the filter beds of the London, Berlin and Hamburg water-works; 2, the intermittent sand filters as illustrated by the filter proposed by the Massachusetts Board of Health for the City of Lawrence; 3, the rapid mechanical sand filters used to a limited extent in this country, which requires a coagulant to make them effective in the removal of the finer suspended matter and bacteria in the water.

Col. A. A. Woodhull and Dr. Rogers followed briefly. The latter said that it was once an impression in Denver that the mountain streams contained the purest drinking water, but in many cases mountain fever, which is nothing else but typhoid fever, had been taken this way, and that twenty-five years ago when the population of Colorado was almost *nil*, and consequently could not have been ascribed to sewage pollution, the streams must have contained the germs of infection. Dr. Munn said that the success of the filter depended quite as much on the intelligence with which the filter was carried on as the method of its construction.

Maryland Public Health Association.

This meeting was held in Baltimore, Nov. 18 and 19, 1897. The sessions were held in the hall of the Medical and Chirurgical Faculty, and were presided over by Prof. Wm. H. Welch of Johns Hopkins College. The first paper was entitled

SANITARY ORDINANCES—POSTMORTEM,

by Dr. HOWARD BRATTON of Elkton. He said: Its application is hindered by: 1, legislation with penalties against uninstructed half persuaded people; 2, difference of opinion among experts and disagreements of doctors in regard to more occult beget a disbelief and indifference to less hidden dangers; 3, acquaintance with best equipped appliances beyond their reach makes them loath to inaugurate any system at all. Attempts to do too much are unwise and result in nothing at all being done. 1. Burial in a cemetery should always require a permit. 2. No burial at all in this particular cemetery or the town limits. 3. Cremation the only proper means of disposal. It is the duty of the medical profession to instruct the public on matters of disease causation. By constantly hammering on the subject of infection with the object lesson before the class they can secure the adoption of prophylactic measures indoors and out, where carelessness and ignorance are the rule rather than the exception; by health associations, by united and individual effort and popular lectures; by systematic study of hygiene and sanitary science in educational institutions. This has at least the advantage of an early start. In fundamental principles of cleanliness, drainage, ventilation, house building, the more practical fields of fixed knowledge. At a later period the questions of unsightly structures, unhealthy surroundings and immorality may be studied in the light of nature. Professors of esthetics may determine how far esthetic defects are interdependent. An unhealthy town is not necessarily immoral. Next is the need and importance of vital statistics, for foundation for health department; to attract and hold the attention of the people. Theoretic knowledge should be evidenced by practical and beneficial results; hence these must be placed before the public.

Dr. PURNELL F. SAPPINGTON of Govanstown made a report upon recent experiences with typhoid fever in Baltimore County. He alluded to soil, air and water pollution, the spread of the disease by neglect of preventive measures and improper treatment of excreta. He considers the disease chiefly caused by impure water, and treated best by cold water and care as to diet.

A member having alluded to the contamination of the drinking water by the pouring into a cesspool of a quantity of coal-oil, as having for a time compelled people to discontinue the use of the wells, but that as soon as the oil had disappeared so the water could be used, they returned to them as a supply for their houses, Mr. Chas. Hartshorne suggested the pouring into the cesspools of a quantity of permanganate of potassa, which, by producing in the infected wells the appearance of bloody water, would at once make them a source to be avoided.

The next paper was

ON POLLUTION OF SOIL AND WATER,

by Dr. J. S. FULTON, secretary of the Maryland State Board of Health. Some years ago in England a man buried a barrel

of petroleum in his orchard. A series of wells averaging sixty feet in depth, and some as far as 900 feet away, were so affected by the diffusion of the coal-oil that even the cattle would not drink the water. In some parts of Maryland 90 per cent. of the private wells are found chemically unfit for use. In other parts a less proportion, but nowhere are so many as half the wells free from organic pollution. If the misuse which man makes of what he calls his land were permitted to work out its logical conclusions, the race would be extinguished. Man stupidly pours into his land as many as he has of the ingredients of a fatal prescription. Luckily, he is apt to lack the one thing necessary to complete the poison. When he possesses the deadly germ he flings it with the rest into the ground and feels no concern as to results. The consequences are more merciful than his conduct. He scatters, like a prodigal, the seeds of death, but kind mother Nature refuses the crop. He befouls the earth wherever he goes, but the sunlight, air, rain and countless hosts of living things are constantly busy cleaning up after him. It is only when he supplies more and worse dirt than these combined agencies can remove that outraged nature exacts the extreme penalty. The amount of scavengering accomplished by these silent, ceaseless forces is incalculable. Chemic examinations of the soil around and beneath old vaults show, in some instances, that within a surprisingly short distance the soil is pure. Widal and others poured quantities of pathogenic germs upon the earth at Granvilliers, and found that they rapidly perished. The bacteria of the soil are as a rule confined to a zone of from a meter to a meter and a half deep. The organisms of the upper earth are mortal enemies of the disease bacteria. Few disease germs have a good chance to survive in the soil under the changed conditions and in competition with the hardier organisms at home there. Direct sunlight is fatal to many species of bacteria. Drying kills many germs, while others are borne to destruction as dust in the air currents. Only a few harmful organisms, mainly those bearing spores, are able to withstand sunshine and dessication. The breeze which disperses a myriad of dried and inert plants may drop a few into soil fitted for their renewed activity. The sun, whose rays shriveled millions, warms hundreds into growth and releases other hundreds from the clutch of frost. The rain which buries some in the inhospitable depths of earth or sea, gives living drink to a parched few, and trickles into your well, supplying at the same time nitrogen upon which they feed. A vertical drain draws from an area having somewhat the shape of an inverted cone. How long its radius at the base may be is indicated by the coal-oil incident. Experiments have been made to determine the deeper radii, and it has been found that the angle of the drainage cone varies with the character of the soil and the rate of pumping. In fine sand, to pump out a foot of water depresses another well in the same stratum at a distance of twenty feet. In fine gravel, to pump out one foot affects a well twenty-two feet away. In chalk, one foot of depression is felt at fifty-seven feet; in sandstone at 143 feet, and in coarse gravel at 160 feet. If water levels are disturbed at such great distances, then the drainage area must be wider at the surface than the coal-oil incident would indicate. That observation shows that upon such soil nine wells would drain a mile. A Baltimore brewer, who tired of buying water at meter rates, sank an artesian well, securing a fine flow. Another brewer, inspired by his neighbor's success, drove a pipe to the same depth and the first brewer's water disappeared, never to return. These observations all show that among a series of wells there are oscillations of current in the common water-supply, the direction of the stream being deflected toward one well or another as each in turn is used. If A uses 200 gallons in the morning, he gets part of the water of B's well one hundred feet away. In the afternoon B pumps 200 gallons, A's well being drawn upon for part of that amount. As the well is filled by the draining from every direction, so from the points of deposit, human waste is dispersed in every direction. It is customary to set apart two or three spots for the collection of these matters, but it is questionable whether in many instances the soil is not more widely polluted than it would be by indiscriminate distribution. Where deposit on the surface is practiced, ordinary care being used to prevent undue accumulation, the area of impure soil is usually neither wide nor deep. Under favorable conditions the bacteria in the surface soil do all the necessary purifying. Sometimes even under unfavorable circumstances, as under and around long-used vaults, the pollution of the soil has been found to extend not further than six or seven feet. This must not be taken as a general rule, however, for there is a saturation point for all soils, and as the bacteria, like other plants, have their seasons, the saturation point is variable. The barriers may easily be passed, and when this occurs, soluble impurities will sink through the soil in ever widening circles. The area of pollution has a conical shape, base down. The width of the angle of pollution will depend upon the nature of the soil and upon its humidity. A wet soil diffuses chemic impurities widely. In a dry soil they sink more deeply. Impervious strata may conduct foul matter for long distances laterally. It is thus made plain that the attraction between accumulations of filth near the surface and the water in deep wells is mutual. The well exerts a steady pull, and the surface filth a steady push. Up to a high dilution, water increases the danger of soil contamination. For that reason, most pits are worse than surface closets. Shallow pits are good putrefaction vats, and in this process most of the contents become soluble. Cemented pits, if frequently cleaned are, so long as they remain water-tight, not offensive. But cement is soluble in sewage and the efficiency fails in a year or two. To remain water-tight, pits should be surrounded by at least a foot of well puddled clay. The grease from kitchen waste will preserve cement and keep a pit water-tight indefinitely. To the average suburban builder that is the chief reason for not admitting kitchen waste to the pit. Where water-closets are used, tight pits fill up very rapidly, and where sewer connections are impossible the expense of cleaning is a burden. This has led to the reprehensible practice of constructing cesspits of rough stone loosely laid in porous soil. Such rarely or never fill up and are said to be self-cleansing. They distribute vast volumes of foul water into the surrounding soil to be cared for by such agencies as chance or nature may provide, but so far from being self-cleansing, they are all befouling contrivances. Fifteen gallons or so of water with every discharge of the flush tank disperses filth much more widely through the soil than does the slow filtration of an ordinary vault or surface closet. When the service pipes of a water company are introduced into a house, the forsaken well is converted to a new purpose. The waste-pipes from closet and bath room are turned into it and it becomes the cesspit. It is a most economic procedure. The well is dug to running water and the local well-digger will tell you that all the wells in the neighborhood have a very perceptible current from northwest to southeast. Thus without scruple the subterranean stream, which is for many people the only water supply, is befouled.

Prof. A. C. Abbott of Philadelphia gave a very interesting lecture upon

DISINFECTION.

He mentioned the use of sulphur, its value when burning in the presence of water so as to be thoroughly oxygenized. To be effective, the agent, no matter what it is, must be brought into contact with the article to be disinfected. Carbolic acid spray he considered valuable though not effective. The cheapest is ordinary white wash. It is not poisonous, nor injurious to furniture or clothing. Corrosive sublimate is undoubtedly effective, but highly dangerous. Heat is a valuable disinfectant in all cases. The utmost precaution is needed to prevent the spread of disease germs from the sick room, generally by carelessness of the attendants. In all cases of infectious disease the patient should be isolated so thoroughly that no article from the sickroom can carry out the germs. Clothing should be soaked in carbolic acid solution before being sent to the laundry. When the patient is well, before being removed his body should be well cleansed and clothed in fresh clothing, before leaving the room. If he dies, then the body should be made completely free from the possibility of conveying the disease in its progress to the grave or other disposal, and in either case, the sick-room must be cleansed as to the furniture, hangings, etc., and disinfection practiced so as to make it impossible for another to contract the disease by using the room. Under all circumstances, such a room should not be used for at least twenty-four hours after the removal of the case.

Dr. W. Royal Stokes of Baltimore followed with a paper on

DISINFECTANTS.

He alluded to a few fundamental facts as to the objects which these agents are directed, then said: The outcome of our experiments has been the discovery of two important methods of destroying bacteria or, as it is technically called, disinfection. 1. By physical agents; 2. By chemic agents. Heat is perhaps the most efficient physical disinfectant, and when infected materials are of little value this actual destruction of, by burning, is the surest way. So radical a method has a limited scope, but we may in many instances apply heat and destroy the infection without injuring the infected material. Experiments have shown that disease germs are all destroyed by exposure to a temperature of 212 degrees or steam-heat for one hour.

In case apparatus specially designed for this purpose is not available, such materials can be rendered harmless by boiling for about one hour in ordinary boilers. Though such measures

are sufficient for the ordinary household, it is often necessary in large hospitals, or at quarantine stations, to sterilize a great quantity of bulky goods at one time. Mattresses, pillows, clothing, blankets are placed in a steam-chamber and exposed to steam-heat until disinfected. Sunlight is Nature's disinfectant, and experiments have shown that direct exposure to its rays for a few hours will destroy such germs as tuberculosis, typhoid fever and diphtheria. The old method of exposing infected linen, carpets, etc., to the sun has thus been proven of value, and the rays of the sun must often destroy many of the bacteria present in infected hospital wards. This influence also is beneficial in destroying many of the bacteria deposited upon the surface of the earth, and even the upper layers of rivers must be somewhat purified by this agent.

The expectoration of consumptives should be deposited in a covered cup containing 5 per cent. solution carbolic acid, which soon kills the bacillus. The sputum can also be discharged into pasteboard boxes made for the purpose and cheap enough to be burned. Towels, handkerchiefs and all soiled linen from consumptives should be boiled or soaked in carbolic acid for twelve hours before being used again. The room should be dusted with cloth dampened with a weak carbolic acid solution in order to prevent the dust from rising, as well as to destroy the germs. Carpets should be swept with a damp cloth broom. For such diseases as typhoid fever, Asiatic cholera, where the intestinal discharges contain the infective germs, the stools should be immediately disinfected by pouring upon them an equal quantity of a 5 per cent. solution of carbolic acid, which should remain in mixture with the infectious material for an hour, before the vessel is emptied. The hands of nurses should be carefully disinfected after attendance upon the sick. Soiled linen should also be sterilized or burned. In diphtheria the discharges from the nose and throat are the chief vehicles of infection, and these can be received upon old linen cloths which are at once burned. If there is much expectoration it should be received in vessels containing carbolic acid solution. Bed clothing or linen which has been soiled by these secretions should be boiled, or disinfected by means of the last named solution. All articles which come in contact with the patient's mouth should be used exclusively by the patient and then carefully sterilized by boiling in a solution of common soda.

In such diseases as measles, scarlet fever, and smallpox, the same general precautions against the spread of the disease should be observed. All receptacles for intestinal discharges or urine should be cleaned by frequent flushings of water, and also occasionally disinfected with chlorid of lime. This is also an excellent material for the purification of the privy vaults or wells. It should also be used in large quantities upon garbage deposits or other collections of decomposing material. Streets and gutters should be frequently flushed with chlorid of lime. Formaldehyde gas destroys the germs of all these diseases. The gas is not poisonous, though extremely irritating to the mucous membrane of the eyes or respiratory tract. This may be avoided by rapidly opening the windows without drawing a full breath in the room, and by wearing closely fitting goggles.

(To be continued.)

SELECTIONS.

Soil Conditions and their Practical Relations to Tuberculosis and Other Infectious Diseases.—Dr. W. H. Welch, in the Baltimore *Health Magazine* (January) discusses the fate of pathogenic organisms which find their way into the soil. Although the nature of the relationship between the conditions of the ground and the prevalence of tuberculosis is not well understood, practical experience has shown that many localities have secured by good drainage of the soil, great reduction in the mortality from this most deadly scourge of the human race, a reduction amounting in some places to nearly 50 per cent. of the former death rate. Similar measures in Berlin and elsewhere have notably lowered the mortality among infants, particularly from summer diarrhea. Having once reached the soil, disease-producing germs may be conveyed to us in manifold ways. An important medium of transportation of bacteria from an infected soil is the water which we drink or use for domestic purposes. Among the various other ways by which harmful bacteria may reach us from contaminated ground it will suffice to specify their conveyance attached to particles of dust in the air, their transportation by flies and other insects, and by domestic animals, their presence upon vegetables, especially those eaten uncooked, and our own direct contact with the soil. It is evident that the possibilities of infection from soil contaminated with disease germs are numerous and often intricate. The list of diseases whose causation has been shown to stand under certain conditions in more or less direct relation to contamination of the ground with their specific germs is a long one. Among the more important may be mentioned malaria, typhoid fever, cholera, yellow fever, dysentery, tuberculosis and the summer diarrheas of infants. Experience teaches, unmistakably, that contamination with the soil with organic refuse favors the development and spread of such diseases as these, and that drainage and purification of the soil by proper systems of sewerage are among the most effective measures for their prevention. No more instructive illustration of the value of modern methods of public sanitation can be found than the inability of Asiatic cholera to secure a foothold during the last two European epidemics, in clean cities, with proper sewerage and water-supply, and its ravages in notoriously filthy or insanitary cities, such as Toulon, Marseilles, Naples and formerly Hamburg. Authorities have differed as to the relative value of sewerage and of water-supply in influencing the prevalence of typhoid fever. We need not pause here to discuss this matter. Both factors are important, the drinking water usually the more important. But it is sufficient for our purpose to show that purification of the ground by proper disposal of sewage is one of the factors in determining a reduction in the occurrence of typhoid fever and other diseases. It is by no means an easy matter in all cases to assign to each one of the various recognized elements which go to make up an entire system of satisfactory municipal sanitation its due share in the beneficial result, for it rarely happens that one is introduced by itself alone, and the harmonious working of the whole system is often necessary to secure the best results from the individual factors, such as pure water-supply, efficient sewerage, good drainage, cleanliness of streets, improvement or removal of insanitary quarters, thorough sanitary inspection of dairies and food stuffs, public disinfecting establishments, hospital for infectious diseases, municipal laboratories, etc. In some instances, however, the conditions have been such as to furnish conclusive demonstration of the separate influence of the introduction of effective sewerage upon the death rate from typhoid fever.

A Modern Paladin and a Victor.—The *Scalpel* for November has a portrait of Mr. Victor Horsley of London, who was recently elected to the General Medical Council of his country. With it is a brief account of his professional qualifications and some facts relating to the vote that was cast at the election that made him one of the "direct" representatives of his fellows. The voting is done by mail. The number of ballots, or voting papers, sent out was 22,576. The voters returned 13,500, or 60 per cent. of these ballots within the proper time; 1050 ballots were too late or miscarried; 130 were defective; while 8061 or 35 per cent. were ignored. In other words, more than one-third of the electors appeared to be indifferent or not to take sufficient interest in the matter to cast its ballot. Mr. Horsley received 6946 votes; Sir Walter Foster 6112; the majority being 834. There were other candidates, but the balloting virtually concentrated on the two leaders. Mr. Horsley is classed as a London consultant surgeon rather than as a general practitioner, a fact that seems to be in the minds of some a root of bitterness; this possibly militated against a larger vote for him among the rural voters. Mr. Horsley's strong hold upon the profession appears to have come about in consequence of his ardor and efficient work in the Medical Defence Union. Mr. Horsley states that he will resign at the end of four years of his term, that being regularly for five years, in order to save the great expense that special elections involve, thus bringing

to one balloting all the general representative candidatures for the five year period next ensuing. One writer not overconfident in Mr. Horsley's soundness of judgment has said of him that he is one of the most brilliant men in the profession, with the great advantage of youth. He has so distinguished himself in science as to have been elected, in early life, a Fellow of the Royal Society, and in surgery as to be one of its most original and enlightened leaders. Nevertheless, he has always manifested the utmost sympathy with the general practitioner and he has displayed for years the most keen interest in defending medical men from all unfair conditions and unjust laws. He has, as President of the Medical Defence Union, acquired an almost unrivaled knowledge of the weak spots in the Medical Acts and the deepest sense of what is required for the honor of medical practice. He speaks with great clearness and force. He is, in short, a very strong personality. Has he no faults? He has the very faults of his virtues; he is impulsive. Sometimes he is prejudiced and occasionally rather too aggressive. He is apt to be borne along with the very impetuosity of his perceptions and convictions. He may not improperly be styled a modern medical Paladin, for like the champions of yore, he is ready whenever necessary to march into the enemy's country, and he has proved himself to be a hard hitter when the time for the encounter has arrived.

The Woerishofen Water Cure.—The death of Pfarrer Kneipp has not closed his establishment. Among those who will try to hold together his important *clientèle* are his pupils Dr. Baumgarten, Prior Reile and Dr. Mahr. A letter-writer from Woerishofen states there are over 2000 patients taking treatment at that place. Dr. Baumgarten is a Prussian from the Rhine district. He is quick, energetic, and has the perseverance of the Prussian. For six years he studied and practiced the cure under the eye of Father Kneipp. He is a firm believer in it. His knowledge of German, French and English, together with his knowledge of the cure, brings him a large number of patients. After the doctor comes the prior, or rector of the Brothers of St. John, who, thirty in number, have charge of the large *Kurhaus* in Woerishofen. Prior Reile is his name. Six or eight years ago Father Kneipp determined to perpetuate his cure in Woerishofen by means of some religious order which would reside and always remain in Woerishofen. The order of the Brothers of St. John, who have many hospitals in Europe, accepted the offer to continue the cure. Father Kneipp built a very large *Kurhaus*, gave it to the brothers, and the general of the society placed the brothers of the *Kurhaus* under the direction of one of them, who was called Prior Reile. The prior was given the duty to heal all people who applied to Father Kneipp by letter. The prior often received 200 letters a day. He gathered around him a corps of clerks to take charge of the large correspondence during the last six years, while Dr. Baumgarten has been practicing the cure in the village. The business of the prior became such that it was found to be necessary for him to have the aid of a physician to help him to correspond about the cases brought before him. Dr. Mahr, a Bavarian, was brought from Munich, who also learned the cure from Father Kneipp; so that today Woerishofen has three men who have studied the cure under its inventor, and have practiced it under his direction. At present each of them has his own *clientele*, and their respective patients are more or less satisfied. Two thousand five hundred kur-guests are here from all countries, together with a sprinkling of the princelings and nobility of Europe, many of whom stand in need of the open air life and somewhat dogmatic handling and discipline to which they are pleased to subject themselves for a longer or shorter period. It may fairly be assumed that this "cure" will survive the loss of its founder about five years longer.

PRACTICAL NOTES.

Puncture of the Heart in Case of Air in the Veins.—Bégouin found that dogs and rabbits dying from asphyxia caused by the introduction of air into the veins were relieved and saved by puncturing the right ventricle, in which he concludes that the air accumulates. He suggests that human lives might be saved also in this way under similar circumstances.—*Klin. Therap. Woch.*, January 30.

Bouginage.—Dilating the Eustachian tube with a bougie introduced through a catheter, Grossard has found efficacious in curing tinnitus in 150 cases, applied three times a week for one to four weeks. It also improved the hearing in many.—*Presse Méd.*, January 26.

Carbolic Injections in Anthrax Infections.—A man with eczema of the ear became infected with virulent anthrax infection at the spot; fever, 104 degrees. In view of the threatening symptoms Natale treated the case with injections in the parenchyma of the part affected with a 2 per cent. aqueous solution of carbolic acid. The fever declined at once and in four weeks nothing was left but a small scar on the ear.—*Gaz. de Osp. e d. Clin.*, January 30.

Introduction of Mydriatics and Myotics into the Eye by Electricity.—In the cases in which the iris is rebellious to the action of atropin or eserin, if an electric current is passed through the eye, moistened with the solution, the effect of the drug becomes apparent at once. A current of two or three ampères will cause the absorption of a sufficient amount of a 1 to 300 solution to produce the desired result.—*Arch. d'Elec. Méd.*, June 25, 1897.

Disinfection of the Intestines.—In the disappointing search for a truly effective disinfectant, Lowenthal advises the investigation of the urine as a test for products of intestinal putrefaction. He has obtained with amiloform, which is decomposed in the intestines, developing formaldehyde, a marked diminution in the purtrefactive processes in the intestines. It also acts as an intestinal astringent.—*Berlin. klin. Woch.*, 1897, 49.

The Arterial Pressure in the Early Diagnosis of Tuberculosis.—A comparative study of the records of cases of chloro-anemia and tuberculosis at the Paris Charité for many years, all showing subnormal arterial pressure, has impressed upon Papillon the fact which he announces as a suggestion to others, *i.e.*, that when the radical arterial pressure of a chloro anemic patient is below 13 centimeters (Potain's sphygmomanometer), there is grave reason to suppose that she has incipient tuberculosis.—*Semaine Méd.*, January 22.

Iodoform in the Broncho-pneumonia of Measles.—Iodoform, 50 centigrams; cod-liver oil, 100 grams; spirit of anise, 2 grams. Commence with two teaspoons a day, increasing with the tolerance of the child. Combine with it inhalations of iodoformed turpentine. Gambardella reports that with this treatment the pulmonary symptoms and fever rapidly passed away, even when commenced tardily.—*Gaz. de Osp. e d. Clin.*, January 30.

The Constipating Effect of Atropin has been confirmed by G. Traversa by a series of experiments on horses and dogs. He therefore suggests that belladonna and its alkaloid are counter-indicated in constipation in man caused by atony of the intestines, but on the other hand they are logically indicated in saturnine colic in which the constipation is produced by spasmodic contractions of the intestines.—*Sem. Méd.*, January 22.

Intestinal Invagination in Infants.—Cordua reports twelve cases; two were cured by energetic massage, anemas and the insufflation of air. Five recovered out of seven operated on during the first two days; two died from shock. Three were operated after the second day, all dying from gangrene and consecutive peritonitis. From a review of 184 cases in literature, he concludes that in operating great care must be practiced to avoid hernia later. In a case of gangrene there should be resection, enterotomy, entero-anastomosis, but infants under a year can not stand such a serious operation and those over a year but little better.—*Gaz. de Osp. e d. Clin.*, January 27.

Double Hyposulphite of Sodium and Mercury in Syphilis.—A. Miceli states that he has been very successful with hypodermic injections of a solution containing 1 centigram of double hyposulphite of sodium and mercury to 1 c.c., the usual dose. This corresponds to 9 milligrams of metallic mercury, a larger amount than the 1 per cent. solutions of other hydrargyrics. The injections were very slightly, if at all, painful and no secondary effects were observed in the fifteen cases treated, while the therapeutic effects were prompt and patients gained in weight.—*Semaine Méd.*, February 2.

Agar Jelly in Dermatology has been found extremely useful as it dries and can not be rubbed off, while easily removed with water. No bandage is required, and it is not necessary to heat the jelly. Another advantage over gelatin is its non-retractility. For erysipelas Gallois prepares a jelly with water 100 grams; gelose, 1 gram; corrosive sublimate and tartaric acid, āā 10 centigrams. For external use. A thin layer is applied to the parts, renewed several times a day.—*Semaine Méd.*, February 2.

Quinin in Gonorrheal Arthritis.—Local applications are usually recommended, fomentations of turpentine possibly the most typic, but Maragliano administers quinin hypodermically and internally, as he considers it the best remedy against infections in general and also because the results of certain research seem to indicate that it has a specific action on the gonococcus. He rejects Bouchard's "pseudo-rheumatism" and Gerhardt's "rheumatoid arthritis," and endorses calling these arthritic affections by the name of the inducing affection.—*Gaz. de Osp. e d. Clin.*, February 6.

Glycosuria in Diabetes at Different Hours During the Day.—F. Schupper has been testing the glycosuria in the urine of diabetics at different hours and finds that the maximum is invariably between eight and ten in the morning, and the minimum during the evening and night. These results indicate that the patient can better support farinaceous substances inwards at night, and that test meals and examinations should be made early in the morning to determine the height of the pathologic process.—*Bul. d. Soc. Lancis. d. Osp. J.*, xxvii, 2.

Success of Injections of Calomel in Lupus.—Especially in old, tuberculous, ulcerating lupus, injections of five centigrams every tenth day produced remarkable cures, the improvement evident from the first. The lymphatic infiltration and exudation processes were arrested and retrogressed. Twenty-five cases are described in the *Ann. de Derm. et de Syph.* of January by Asselbergs, who considers calomel injections a most valuable adjuvant to the usual treatment. He observes that his success in the genuine non-syphilitic lupus deprives calomel injections of their hitherto assumed values as a diagnostic measure in syphilis.

Paraffined Gloves and Hands in Surgery.—C. Menge not only uses the lisle thread gloves recommended by Mikulicz, but he renders them impermeable to liquids, while retaining their flexibility, by dipping them into alcohol after they are well dried in the oven, then into pure xylol and then into xylol containing ten grams of soft paraffin in solution to each 100 c.c. This solution is slightly warmed and the gloves remain in it fifteen minutes, when they are wrung out and dried again. They can afterwards be sterilized in steam. He also recommends rinsing the hands in the paraffined xylol after the usual alcohol sublimate toilet, wiping as usual. The hands shine then a little as if varnished, but they are no more slippery than usual, and there is no unpleasant sensation from it. He proceeds then directly to his operation, or puts on the paraffined gloves outside.—*Semaine Méd.*, February 2.

Faure's Method of Suturing Hernias Without Buried Stitches.—J. L. Faure has improved on the Duplay and Cazin method described in the JOURNAL (Vol. xxvii, No. 26), by utilizing the split hernial sac for threads to suture the inguinal ring. The sac is slit its entire length into two pieces, and these are tied in a double knot which closes the peritoneum. The two ends are then passed back and forth through the tissues, lacing up the canal, and tied in a double knot at the other end. This method can only be applied when the sac is of a certain size and firmness, but in these conditions it proves more than satisfactory.—*Presse Méd.*, January 2.

Antipyrin for Diagnosticating Kidney Diseases.—Dr. L. Bremer, in a paper read before the St. Louis Medical Society, has expressed the belief that he has discovered a new method of diagnosing diabetic, pancreatic and kidney diseases by reason of the affinity of the blood and secretion of a diabetic patient for certain anilin dyes. His experiments demonstrated that the secretion of a healthy person has an absolute antipathy for the dye known as gentian violet. When the dye was poured into the secretion of a healthy person it remained floating upon the surface. When the same dye was poured into the diabetic urine it dissolved instantly and colored the whole fluid. The reaction of the dyes and acids upon the unhealthy secretions was most remarkable, showing the colors and sequence of the real spectrum, beginning with red at the base and ending with dark blue and white at the top. The blood of the subjects was affected in the same manner as the urine.—*Western Druggist.*

Flexion of the Spinal Cord Instead of Suspension in Tabes.—Eulenburg rather ridicules re-educating appliances, and advocates strongly the new substitute for suspension, stretching the spinal cord by bending the trunk forward at an acute angle with artificial, gradually increasing pressure (Gilles de la Tourrette and Chipault). The patient sits with outstretched legs on a long, low table. A couple of leather straps are fastened to the edge of the table and pass around the trunk in a figure of of eight, crossing in front of the epigastrium and in the rear over the upper dorsal vertebræ. The ends hanging over the shoulders are fastened to a cross-bar, attached by a rope running over a drum, to a turning crank below. Pressure is regulated with a dynamometer. Applied for five minutes or longer, two or three times a week, he has not observed any inconveniences in his four months experience. It seems to be supported by the patients much better than suspension. The benefit was evident in the improvement in the ataxia and the disappearance of the lancinating pain, etc.—*Deu. Med. Woch.*, February 3.

Eucain as a Local Anesthetic.—At the Montreal meeting of the British Medical Association, Drs. Horne and Yearsley gave the results of the use of eucain as a local anesthetic in one hundred consecutive cases. The cases had to do with operations on the ear, nose and throat and are enumerated in the *Therapist* of January 15. They recommended 5 grain soloids of eucain hydrochlorid from which to prepare fresh solutions. For the examinations a 4 per cent. solution was used, and for the operations an 8 per cent. Upon the method of applying the drug depended largely the amount of anesthesia produced. It was found that in the case of the ear, a few drops instilled and kept in contact with the part to be operated on, by inclining the head, was more efficient than the use of saturated pledgets. The reverse was the case with the nose. The pulse was not materially affected in either rate or character, and in not a single case was there evidence that the cardiac action was influenced by the drug *per se*. It is true that eucain induces hyperemia on application to the mucous membrane, but this rapidly passes off, and in no case was there excessive hemorrhage following operations under eucain and not commonly met with in the use of cocain. It was found that in the presence of acutely inflamed tissue, *e. g.*, acute tonsillitis, pharyngitis, etc., there was an increased flow of saliva, but in a non-inflamed tissue this effect was not produced. As to the disturbances of sensation, more particularly in the case of the pharynx, eucain was less unpleasant and less marked than cocain, but more transient, subjective sensations being normal in about an hour.

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SATURDAY, MARCH 19, 1898.

LOCALIZED INFECTIOUS DISEASES AS A SEQUENCE OF SLIGHT INJURIES.

Medical witnesses and attorneys are very frequently called upon to consider the claims of persons who having been more or less severely injured by an accident, attribute the subsequent state of their health entirely to this cause and bring suit against the railroad company, or the parties causing the injury, for damages. In a certain proportion of cases it is a well recognized fact that the claims of the plaintiff do not hold good. In some instances, for various legal reasons, he is non-suited and in others is defeated even if the case goes on trial. In still other instances, the trial having been completed, the jury awards damages which may or may not be in excess of the requirements of justice. With those instances where the patient's health and activities are permanently and directly impaired by an injury received from the carelessness of a common carrier, we shall not deal. Our interest, in this editorial, centers rather upon those cases in which no serious external manifestation of the injury exists, and yet immediately following the accident grave disease or perversion of function in some of the internal organs develops.

One manifestation of internal injury without marked external symptoms is so familiar to physicians and lawyers that it need not be considered, for the literature which has already accumulated in regard to it is both exhaustive and exhausting. There is a class of cases which is technically grouped together under the head of traumatic neuroses, a complexity of symptoms which in many cases renders the patient deserving of the amount which he sues for and in other instances serve to defraud the defendant by reason of the fact that some of the symptoms of a traumatic neurosis can be fairly well aped by a malingerer. With those we shall not deal.

The question with which we especially wish to deal is indicated by the heading of this article, and our attention has been called to it in particular by a case recently on trial in one of the great cities of the Union, and by a very able paper by Dr. MCDILL of Milwaukee, who writes in association with Mr. VAN ALSTINE of the Chicago, Milwaukee and St. Paul Railway (*The Railway Surgeon*, Jan. 11, 1898).

In the case which we have referred to, a man, by occupation a grinder, and suffering from the early manifestations of "grinder's disease" of the lungs, was thrown with considerable violence from the platform of a street car and struck upon his right shoulder and chest with so much force as to seriously bruise the tissues about the shoulder and the tissues over the ribs in the axillary line. Within the course of a week or two it was noticed that the man's health had become very much impaired. Shortly afterward evidences of pulmonary disease became manifest and thirty-five days after the accident the man died. At the postmortem examination no evidence of external injury was manifest, the ecchymosis resulting from the accident having been absorbed. One lung was found almost entirely consolidated and the other partially so. Scattered through both lungs were a number of large deposits of fine metallic particles derived from the emery wheels and the steel which he had been accustomed to grind.

Suit was brought by the administratrix of his estate, it being claimed that his ill health and death within a short time after the accident was the result of the accident. It was admitted by the railroad company that the accident had occurred, and that so far as the accident itself was concerned, it was responsible. The question which rested upon the medical experts for decision, was whether the pulmonary disease which eventually resulted in the man's death could be attributed to the accident, and the testimony was such that immediately after it was heard the railroad company sought a settlement, which was granted. It was testified that severe injury to the chest might very readily so impair the vitality of the lung as to cause the rapid spread of disease already existing, but very mild in character, or to render the lung peculiarly susceptible to any infection to which it might be exposed. If the consolidation of the lung, which finally resulted in the man's death, was due to a tubercular process, then it would be very easy to understand how a violent injury to the chest wall might so disorganize the inflammatory exudations, which had been thrown out around tubercular and metallic deposits that they might be broken down, thereby making open the pathways for general infection. On

the other hand, it was possible that the micro-organism of pneumonia, always present in the upper respiratory passages of man, might find a ready soil for its propagation.

This testimony is of some importance in connection with cases of the character which we have mentioned and it is endorsed by a large amount of literature which has been accumulating during the last few years, particularly since accident insurance has become popular.

In MCDILL and VAN ALSTINE'S paper they quote much of this literature which bears both directly and indirectly upon the case that has been cited. Thus SPENGLER, in the *Deutsche Zeitschrift für Chirurgie*, Part 2, p. 1, 1886, showed that in about one-half of 136 cases of joint tuberculosis, there was a history of antecedent trauma, and SABRAZES and BINAUD, in an article on "Tuberculosis of the Mammary Gland," assert that an accidental cause is necessary to start it. Then, too, JACCOUD, in the "Bulletin of the Academy of Paris," for 1896 has reported four cases of traumatic tuberculosis of the lung. In three of these the patients were healthy men before the accident and became tuberculous after suffering injuries to the chest. In two cases JACCOUD traced tuberculosis in traumatic pneumonia. Similar instances are quoted by MCDILL from SCHILLING, WAGNER and others, and they themselves record a case of a young man of 26 years who after a severe injury died of catarrhal pneumonia, and a distinct line of injury could be traced from the skin through the pleura to the lung. SENN has also pointed out the close association between trauma as an etiologic factor and tubercular infection, and the fact that injury very gravely predisposes a part to infection by any micro-organism has been proved by a very large amount of experimental research. MCDILL and VAN ALSTINE conclude, we think rightly, that clinical experience and experimental investigation show that infectious diseases often follow slight injury. They also believe that where negligence causes this injury and the injury proximately causes disease, both the injury and the disease are elements of damage in legal action. Two facts are to be carefully borne in mind in this connection, namely, that while on the one hand slight injuries may be followed by grave disease, on the other, patients learning of this fact may often seek to magnify the symptoms from which they are suffering, in order to obtain a verdict. It is necessary therefore for physicians and lawyers to remember that slight injuries may give rise to very proper suits for damage and careful notes of all such cases should, therefore, be kept, in order that a full history of the case from beginning to end may be at hand should suit be brought.

Let us defeat the Antivivisection Bill!

STATE AND COUNTY CARE OF THE INSANE.

The public care of the insane is now recognized in all civilized countries as an essential in some form or other, and the ideal system has been generally accepted as that in which the State at large assumes this duty. The State hospital or asylum of the present is an outgrowth of the humanitarian public spirit which revolted at the conditions under which the unfortunate lunatics formerly were kept in ill furnished and worse managed jails and poorhouses in which, in misery and filth, they dragged out an actively abbreviated existence. Undoubtedly the pendulum has swung to the other extreme in some instances; reformers are rarely conservative, and often are not broad-minded enough to see that by extravagance in their demands for a part they defeat their object as regards the whole; that a few of the insane are often thus housed in comparative luxury, while the great mass are in no wise improved in their surroundings or condition. The ambitions of architects and the satisfaction of local pride also have their part, and it may be political jobbery has also in some quarters had its share in favoring extravagance in asylum building with its consequence of enforced continuance of inadequate and irresponsible county care for a large portion of the insane. The result has been to some extent a reaction against the elaborate and expensive establishments of some years back, and attempts at less extravagant methods of caring for the insane. The necessity of State care has also been questioned, and in one State, Wisconsin, a plan has been devised and followed, which is claimed by its advocates to more completely meet the needs than any other as yet proposed. With the State hospitals for acute and violent patients they have in that State a system of county asylums, to which are sent the milder chronic cases that require less restraint, and are presumably hopeless as regards recovery, so that direct medical oversight and hospital care are not essential as far as they are concerned. The advantages claimed for this system of county care are, according to its advocates, who have brought over to their ideas certain philanthropists interested in this question outside of the State, first, its inexpensiveness as compared to the palatial State hospitals; second, a more normal mode of living for the insane, who are not usually accustomed to be housed "in palaces," more general employment of the inmates on the county farms, thus in a measure contributing to their own support; and third, that by it the State hospitals, relieved from the care of the chronic insane are the better able to devote their energies to the care of the acute and curable cases. They thus become more truly hospitals and not asylums or places for mere humane detention of a class that it is inconvenient or dangerous to permit to go at large.

There is no doubt but that these Wisconsin county asylums are a vast improvement over the average

county poorhouses, such as are still to be found in most of the States, and which still shelter a considerable proportion of the chronic insane. That the Wisconsin plan is the ideal system it is claimed to be, is, however, seriously to be questioned. The argument against it is very well stated by Dr. R. M. PHELPS in a recent number of the *Northwestern Lancet*, in which he shows that the claims of greater economy is to a certain extent fictitious when the total cost of the care for the insane in the State is taken into consideration; that the average per capita cost of the county asylums by their own figures is not less than that of some of the best State hospitals of recent construction, and notably more than some, that the home-like surroundings are likely to be in a measure also fictitious, unless we are to assume that all the chronic insane in these establishments are to be selected from the laboring class, a sort of social classification that one would think might be objected to by the taxpayers and inmates' friends. The strongest point made in their favor is, he thinks, that there is more employment given to the inmates than is the rule in the State hospitals; but this fact is not a necessary one, and there are large State institutions where the ratio is higher than in these county establishments. The argument he makes for the large State hospitals as regards medical care may be a little surprising to some who are now advocating smaller establishments with more purely hospital functions, but it will probably be found, as he says, that the best medical and clinical work today is being done in the larger institutions.

Against the county asylums Dr. PHELPS addresses the following arguments:

First, the lack of direct medical supervision. That this is of some importance can be shown by the fact that with the best selection of cases, the fact that they are all more or less defective degenerates and if they do not succumb earlier they are subject to the changes and diseases of senility, is sufficient to show the need of more than the interrupted medical oversight they receive. There is no possible comparison of the death rate of these inmates in the county asylums with what it would be were they under the closer medical oversight of the larger hospitals, but there is very little doubt that it would be unfavorable to them. Treatment for improvement of mental condition is by no means useless with the so-called chronic insane, and the more experienced the alienist the less inclined is he to be dogmatic as to the absolute incurability of this class.

Another important objection made by Dr. PHELPS is the tendency to reversion to poorhouse methods. The economy of rural county officials is well known, and, though he does not allude to it, it must be in some cases a factor operating against the proper meeting of the real needs of the insane. Another objection is the necessary lack of means of classification in these smaller asylums and the consequent congregation of the disturbing and untidy with the others in these poorly equipped and attended establishments. The oversight of a board of control or of charities, who are fully committed to the advocacy of the system, is hardly as sufficient an assurance against all possible abuses as might be desired. It would be better to have this function deputed to its critics, or at least to those who from long experience with all the methods of caring for the insane in hospitals in the State and elsewhere, could intelligently judge the merits and deficiencies.

Dr. PHELP's paper brings out strongly some of the leading drawbacks of the Wisconsin system, which is not, in any true sense, an ideal one, though where economic or other reasons prevent a better provision, it may serve a useful purpose. With thoroughly honest and economic methods in the State care of the insane, there is little to be said in its favor, even as regards expense, and that little is more than compensated for by the general results of enlightened medical care, which must necessarily be somewhat lacking in the county institutions.

THE GIANT CELL IN HEALING TUBERCULOSIS.

The morbid anatomy and histology of the essential lesion of tuberculosis have long been known, and while sixteen years have elapsed since KOCH'S discovery of the specific parasite of tuberculosis, still, in the face of a vast amount of study, many questions relative to the source, the conduct and the fate of the elements of the tubercle remain unanswered. The giant cell of the tubercle—that prominent and well-known object—what is its origin and its destiny? The genesis of this element is still unknown; indeed, it is a point upon which such brilliant investigators as LANGHANS, BAUMGARTEN, WEIGERT, KOCH and METCHNIKOFF hold diverging opinions.

In the progressive and destructive form of tuberculosis the giant cell dies and becomes a part of the cheesy mass of necrotic material so evident in advanced tuberculous lesions. In case the destructive tendency of the infection becomes arrested from attenuation in virulence of the invading parasite, or from unusual resistance on the part of the tissues of the host, and a reparative process ensues, what then becomes of these monstrous multinucleated cells so abundantly present?

It is this question concerning the fate of the giant cells in healing tuberculosis that HEKTOEN (*The Journal of Experimental Medicine*, Vol. III, No. 1, 1898) has recently investigated. As material for his careful study the author was so fortunate as to obtain specimens from a case of spontaneously arrested tubercular leptomeningitis in an adult man; certainly a peculiarly suitable object for observation. The clinical conduct of the case was such as to lead

to a diagnosis of syphilitic brain disease, but the anatomic and histologic evidences pointed more strongly to a tubercular meningeal affection, and the question as to the nature of the infection seems to have been set at rest by the isolation and cultivation of the tubercle bacillus from the meningeal exudate, and by the discovery of a very few tubercle bacilli in stained sections of the pia-arachnoid. As to the reparative tendency of the process the writer presents six propositions, based on histologic evidences, to prove that the lesions are progressive and not regressive ones.

In this investigation HEKTOEN has centered his attention upon the giant cells in these apparently healing tubercles, and by a painstaking study of these elements in serial sections and in various situations, concludes that in healing tuberculosis the giant cell does not degenerate, is not absorbed or destroyed by phagocytes, but that its nuclei resume activity, as shown by their heightened affinity for nuclear dyes, and that the protoplasm becomes vacuolated and subdivided until, *from the giant cell, many small but perfect mononuclear cells arise.* From this it would appear that the giant cell, originating as a defensive histologic element to combat the invading tubercle bacillus (providing it does not succumb in the struggle), disposes of its ingested bacilli and, after a period of recuperation, subdivides into numerous small and apparently functional cells which seem to be identical with the formative endothelial cells of young connective tissue. HEKTOEN does not witness a complete reparative process in all giant cells, since in certain of these bodies necrotic processes like dispersion and solution of nuclear chromatin seem to occur in the same cell in which the new elements are forming.

If we are to believe in the indelible histogenetic impress which is assumed to be an attribute of the cell and its nucleus in regeneration of animal tissues, then these phenomena as interpreted by HEKTOEN would offer a strong argument for METCHNIKOFF'S view of the origin of tubercular giant cells from the fusion of mononuclear endothelial connective tissue cells, or from the multiple nuclear division of these cells. Its period of unusual exertion successfully ended, the giant cell returns to the elements which gave it birth—assuredly a very pretty example of that adaptation which nature so bountifully provides in the animal organism to meet the destructive agencies of disease!

EPIDEMIC CEREBROSPINAL MENINGITIS.

Recent medical journals contain articles embodying the results of the anatomic and bacteriologic studies of a recent epidemic of cerebrospinal meningitis in Boston, by COUNCILMAN[1] and his associates MALLORY and WRIGHT.

These reports furnish important additions to our knowledge concerning this disease, as it occurs in America. This disease has appeared at various times in this country. Thus, it raged in Medfield, Mass., in 1806, extending over the New England States into Canada, Pennsylvania and Maryland, prevailing at some point or other until 1816. This epidemic corresponds to the first period of the history of this disease, according to HIRSCH.[2] The second period extends from 1837 to 1850, during which time the disease prevailed principally in France. The third period from 1855 to 1875, when the disease prevailed chiefly in Germany; but there were a number of local epidemics in America, one in Illinois, reported by JOHN B. HAMILTON, 1873 to 1874,[3] and the fourth period, 1875 to the present time, during which time the disease has appeared in small epidemics in a great number of places. Thus, there was a considerable epidemic in Boston in 1874; in Lonaconing, Md., in 1892, and in New York in 1893. In this connection reference may be made to the report on epidemic meningitis published by ALFRED STILLE[4], in Philadelphia in 1867, in which he describes the disease as he had occasion to observe it during an epidemic which ravaged the United States for ten or eleven years previously. STILLE saw 120 cases of the disease during the first quarter of 1867, in the Philadelphia Hospital. One hundred of these cases form the subject of a valuable report by Dr. GITHENS[5].

It is interesting at the present time to read STILLE'S description of the anatomic characteristics, and of the causes of the disease, as they were taught at that time. STILLE summerizes the attempts of BAUDIN[6] and others to prove the contagious nature of epidemic meningitis, by saying, that they fail most where most they need strength, namely, in the proof that the disease is ever communicated from man to man, and without that proof there is no evidence of contagion. One fact to which all American and European writers bear testimony, is the extreme rarity of its attacking physicians and nurses in attendance upon the sick, and those patients affected with other diseases who occupy adjoining beds in hospital wards. He says that we may know some external influences that appear to favor, but we know of none that are essential to, its generation.

During the winter and spring of 1897 there prevailed a small epidemic of the disease in Boston, and in the articles published by COUNCILMAN, MALLORY and WRIGHT, 111 clinical cases are considered. The largest number appeared in March, April and May. Here also there was found but very little evidence in favor of actual contagion. As a rule but single cases appeared in the same family and in the same house. A map of the city, giving the distribution of the sin-

[1] Boston Medical and Surgical Journal, 1898, Johns Hopkins Bulletin, 1898, and American Journal of Medical Sciences, March, 1898.

[2] Quoted by Councilman.
[3] New York Medical Journal, Vol. xxi, p. 113, 1875.
[4] Stille, Epidemic Meningitis, Philadelphia, 1867.
[5] American Journal of Medical Sciences, 1867.
[6] Quoted by Stille.

gle cases, showed them to be well scattered. There is but little in the literature concerning the subject of immunity in this disease, and the problems of genesis and of the mode of infection are therefore still open for study.

The mortality of the 111 Boston cases was 68.5 per cent. The exact cause of cerebrospinal meningitis was first described by WEICHSELBAUM[7] in 1887 as a diplococcus, which he calls the *diplococcus intracellularis meningitidis*, because in the lesions it is found almost solely within the cells. In the cultures this organism grows singly, in pairs and in fours. It is pathogenic to guinea pigs and rabbits, producing serofibrinous inflammations when injected into the serous cavities. Not much attention was paid to this demonstration by WEICHSELBAUM until 1895, when JÄGER[8] found the same organism in twelve cases of epidemic cerebrospinal meningitis occurring in the garrison at Stuttgart. JÄGER'S description corresponds very accurately with that of WEICHSELBAUM.

The most important result of the study of the Boston epidemic lies in the demonstration that in thirty-five of the cases in which postmortems were made, WEICHSELBAUM'S diplococcus was found in thirty-one. Three of the four negative cases concerned very chronic instances of the disease. As a rule the organisms were easily cultivated in the acute cases, although it was soon found advisable to make a large number of inoculations, because the microbe evidently loses its vitality rapidly. The descriptions of the cultures and of the histologic lesions given by COUNCILMAN correspond in the main to those already published. Mixed infections with other organisms were not uncommon. The pneumococcus was found seven times; FRIEDLÄNDER'S bacillus, the staphylococcus and streptococcus occasionally occurred.

In fifty-five cases lumbar puncture of the spinal canal was made during life, and in the fluid obtained diplococci were found in thirty-eight cases. The average duration of time from the onset of the disease to the date of spinal puncture was seven days in the positive cases, and seventeen days in the negative. On the whole, too much can not be said of the importance of lumbar puncture in making a diagnosis of the disease. There should always be made a microscopic and bacteriologic examination of the fluid, in order to ascertain exactly what organisms are present, because this knowledge is certainly useful in making the prognosis. Meningitis, apart from the epidemic form, is commonly caused by the tubercle bacillus, the pneumococcus and the streptococcus. Naturally these cases of meningitis are usually secondary to infection elsewhere. In a series of cases of this kind referred to by COUNCILMAN the pneumococcus was found ten times. COUNCILMAN and his collaborators express the important opinion that all the infections of the meninges, other than with the diplococcus intracellularis, are fatal. The complete proof of this can not be determined except by microscopic and bacteriologic examination of the exudate during life by spinal puncture. If tubercle bacilli, pneumococci or streptococci could be found in a case of meningitis which recovers, it would settle the point. Clinical observation alone can not do it. As the cases of epidemic meningitis become chronic and tend toward recovery, the fluid withdrawn by puncture, hitherto purulent, becomes clear and the number of organisms present diminishes very rapidly, hence the prognostic significance of repeated puncture.

This is not the place to enter into a lengthy description of the histologic changes found. It is interesting to note the condition of the lung, however, on account of the relation which is very generally supposed to exist between epidemic meningitis and pneumonia. In thirteen cases there was congestion with more or less edema; in seven cases there was bronchopneumonia, most marked in the lower posterior part of the lung. In two cases there was a characteristic croupous pneumonia, and in the lung of these cases pneumococci were found. In eight cases lung changes due to the diplococcus intracellularis was found in the form of small bronchopneumonic foci. In one case the consolidation was so extensive that it might easily have been considered as a typic croupous pneumonia. The lung complications due to the pneumococcus may, according to the statistics of the Boston epidemic, take place in almost any period of epidemic meningitis. Thus, in one case pneumonia developed after the meningitis had existed for seventy-four days.

From these and other investigations it appears definitely settled that the disease known as epidemic cerebrospinal meningitis is caused solely by the *diplococcus intracellularis meningitidis* of WEICHSELBAUM, which must be looked upon as a distinct and separate species of micro-organism and not merely a variety of the pneumococcus. Furthermore, that great care must be exercised in attributing leptomeningitis when it occurs in connection with croupous pneumonia to an infection with the pneumococcus alone, because instances of mixed concurrent infection with these two forms of diplococci appear to be not so very infrequent. As already indicated, the manner of infection in epidemic meningitis, the distribution outside the body of the specific micro-organism, and other questions concerning the origin of the disease, merit further investigation.

[7] Quoted by Councilman *et al.*
[8] Centralbl. f. Bact. u. Parasitenkunde, 1895.

CORRESPONDENCE.

"The Humane Society Deal in Fiction."

REPLY TO THE STATEMENTS MADE BY THE PRESIDENT OF THE WASHINGTON HUMANE SOCIETY IN A LETTER ADDRESSED BY HIM TO EACH SENATOR OF THE UNITED STATES.

BALTIMORE, MD., March 7, 1898.

To the Editor:—In your issue of March 5 (p. 565), you pub-

lish under the caption "The Humane Society Deal in Fiction," a letter addressed by Mr. A. S. Pratt, the president of the Washington Humane Society, to a well-known Senator, urging him to vote for the antivivisection bill now before Congress. A letter with the same contents was sent to each Senator. In compliance with the request of one of the Senators that a reply be made to the statements of Mr. Pratt, I have sent this Senator a letter from which I beg to send you the following extract. Most of the points were covered more fully in my paper "Objections to the Antivivisection Bill," published in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, Feb. 5, 1898, and published also as Senate Document 104, 55th Congress, second session. Mr. Pratt, I am informed, is engaged in the insurance business in Washington.

Very Respectfully, WILLIAM H. WELCH, M.D.

1. Senate bill 1063 is correctly described as an antivivisection bill, and the only reason which Mr. Pratt or any one else can have to assert the contrary is that it does not totally prohibit all experiments upon animals. It originated with the Washington Humane Society, a notoriously antivivisectionist organization, whose president (Mr. Pratt) says in his annual report for 1894 (p. 24): "The subject of vivisection has been frequently before your executive committee during the past year and but one sentiment has been expressed, viz., that of utter abhorrence and condemnation of the inhuman practice." The great majority of the advocates of the bill are antivisectionists.

The great body of medical and scientific men of this country are practically unanimous in opposition to the bill, not a single medical or scientific society having expressed itself in favor of it, whereas considerably over a hundred such societies, including all of the important National and State and many local societies, have passed resolutions remonstrating vigorously against its passage.

The bill is an antivivisection bill not only because it originated with and is advocated by antivivisectionists, but also because it prohibits many important and useful kinds of experiments upon animals, surrounds the performance of others with such restrictions as virtually to prohibit them, and in fact permits no experiments whatever save under extremely vexatious conditions. The contention so much insisted upon by advocates of the bill that it is not prohibitive of any useful experiments can not be admitted for a moment by any one acquainted with the bill and familiar with the purposes and needs of experimental medical and biological science.

2. The summary of the provisions of the bill given by Mr. Pratt in the second paragraph of his letter is grossly incomplete and misleading. Among the objectionable provisions of the bill which he does not mention are:

a. No one, except an officer of the government of the United States or of the District of Columbia, can perform an experiment without first procuring a license from the Commissioners of the District, who can refuse all such applications if they choose to do so. It would be difficult to show what qualifications these Commissioners possess, or are likely to possess, to enable them to judge of the fitness of medical and scientific men to make experiments upon animals.

b. In addition to a license, a special certificate must be procured in case any one of certain commonly used animals is to be employed for experiment.

c. The Commissioners may call at any time upon experimenters (including officers of the United States Government) for reports upon the methods and results of their experiments, and the official inspectors are required to publish the results of their observations. Many important experiments would not be undertaken under any such vexatious conditions as these.

d. The Commissioners may require any place where experiments are performed to be registered. They may disallow or suspend any certificate without any hearing on the part of the holder. In a word, the Commissioners are made the dictators of the medical profession in matters requiring expert knowledge and sympathy with the needs of medicine.

e. With the exception of certain demonstrative experiments for lectures, the only experiments permitted by the bill are those intended for the advancement of knowledge by *new discovery* and this knowledge must be of one of two kinds, either physiological, or for saving or prolonging life or alleviating suffering. This excludes such experiments as those often practiced by the surgeon to acquire skill in operating and those for the confirmation of alleged discoveries by others.

f. The bill permits the use of only two anesthetics, ether and chloroform. There are other anesthetics, in some cases essential for the purposes of the experiment, and it is absurd to prohibit their use.

g. With the exception of inoculation experiments, tests of drugs or medicines and tests of surgical procedure, no animal is permitted to survive after an experiment unless kept continuously under the influence of ether and chloroform. This provision prohibits a large number of important and useful experiments.

h. The bill prohibits the granting of a license to any one under 25 years of age, unless a graduate of medicine duly authorized to practice medicine in the District of Columbia. As Dr. Dabney has pointed out this excludes a large proportion of well trained biologists such as are employed in the Bureau of Animal Industry.

The foregoing are only some of the objectionable provisions of the bill which Mr. Pratt neglects to mention. This bill is in fact a very complicated measure, loosely drawn and doubtful in the interpretation of some of its provisions, and calculated to inflict most serious injury upon the progress of medicine and biology in this country. It is copied in large part from a British law, but goes further in its restrictions than the latter, which has proven to be most injurious to medical science in Great Britain. The whole impulse for this legislation started among antivivisectionists in England some twenty years ago, but thus far other countries, including our own, have been spared such an infliction.

3. Mr. Pratt is in error when he asserts that "ordinary inoculation experiments are expressly excluded from the operation of this law." The only concession regarding this class of experiments is that they may be made without the administration of anesthetics. All of the other vexatious provisions of the bill apply to inoculation as well as to other experiments.

4. Accusations of "revolting cruelty and barbarity" in the performance of scientific experiments upon animals, of which Mr. Pratt and the Humane Society profess to have "certain knowledge" are made in the most reckless and wanton manner by antivivisectionists. Mr. Pratt's statements with reference to alleged cruelty and secrecy in the performance of experiments in the District of Columbia and elsewhere in this country are unsupported by evidence. Not a single authenticated example of such cruelty, that is, the heedless infliction of pain, has he or any one else been able to adduce in the District of Columbia. The Superintendent of Public Schools of Washington, in a letter dated April 24, 1896, has officially stated that no vivisection experiments are performed in the public schools of that city, and that they never have been performed there. Those who have the best opportunities to know the real facts are confident that no cruelty exists in the performance of animal experimentation, which would justify any restrictive legislation whatever in this country. If any instances have occurred, they are certainly most exceptional, and are quite within the power of public opinion, including that of the medical profession, aided by the ordinary law, to cope with.

5. The charge of secrecy in the performance of animal experiments is without foundation. These experiments are published in scientific journals with full details, and any properly qualified person has free access to laboratories where such experiments are made. The scheme of inspection provided for in this bill may readily lead to a system of outrageous espionage utterly foreign to our system of government, and degrading and intolerable to the scientific men who conduct the experiments.

6. Mr. Pratt's utterly baseless and absurd, I do not hesitate to say wicked, charge that members of the medical profession are educated to "utter indifference to the infliction of pain and the sacredness of human life" and subject the sick poor in hospitals to experimentation, is an example of the recklessly false assertions of antivivisectionists. It is inconceivable that statements of this character, which fairly represent those upon which the antivivisection agitation is based, should be allowed to influence legislation in the Congress of the United States.

7. Mr. Pratt's argument that experimenters, because they do not concede any abuse of vivisection in this country justifying the proposed legislation, should be willing to submit to the provisions of such a bill as Senate bill 1063, seems to me too absurd to require comment.

8. Medical and scientific men very naturally and properly object to penal legislation directed exclusively against them in the conduct of investigations which they believe to be of the utmost importance to scientific and practical medicine and therefore to humanity. The District of Columbia already has an effective law for the prevention of cruelty to animals, which permits only properly conducted scientific experiments under proper authority. Those who conduct experiments are no less subject to this law than other members of the community. No special or class legislation on this subject is needed and such legislation is offensive in the extreme.

9. It is true, as Mr. Pratt states, that Senate bill 1063 was reported unanimously by the Committee on the District of Columbia. I believe that I am correct in stating that this matter was left by his colleagues on the Committee very largely in the hands of Senator Gallinger, who would seem from his report on the bill to be an extreme antivivisectionist. He must by this time realize that in this matter he has antagonized the sentiments of the great majority of medical and scientific men of this country. There never was an adequate presentation of the arguments against the bill before the Committee. I have information that at least some members of the Committee have changed their opinions and are now opposed to the bill.

10. It is likewise true that a very impressive list of names is attached to a petition favoring this legislation. Here again I know of some who, having become better informed, have written letters retracting their consent. You know better than I how much value is to be attached in general to such petitions, for which it is sufficiently easy to secure signatures. Undoubtedly not a few of the general public have been misled by the grossly false, misleading and sentimental appeals of antivivisectionists. Upon this matter it is the voice of science and of medicine, which is likewise the voice of true philanthropy, which should be heard and which should control legislative action, and not that of those who, however worthy their impulses, however high their social position, however great their knowledge in other departments, do not possess that special knowledge which renders them competent to judge of the merits of this question. The voice of science and of medicine, so far as it receives authoritative utterance, is overwhelmingly opposed to any such legislation as that contemplated by this bill.

As to the necessity and great value of animal experimentation to scientific and practical medicine, both human and veterinary, and to biological science, there is practically no difference of opinion among well informed medical and scientific men. Thousands of lives of both human beings and animals have been saved and in increasing number will lives continue to be saved by knowledge which could have been gained only through experiments on animals.

In conclusion permit me to express my gratification, and I may safely add the gratitude of all enlightened physicians and scientists, that your powerful influence is being exerted in opposition to the enactment of Senate bill 1063. In this you have espoused the cause not only of science but also of humanity.

Malaria Infection.

CHARLOTTE, N. C., March 7, 1898.

To the Editor:—In your remarks under the above heading, in the issue of March 5, 1898 (page 561), you make some statements which appear to deserve some qualification, at least from my information and experience on the subject. That there is a form of malaria (the disease) which resists the therapeutic action of quinin even when in proper dosage by the stomach, rectum and skin, is within the experience of a number of physicians throughout the South. This form of malaria, designated the estivo-autumnal, will not infrequently persist in spite of the exhibition of large and repeated doses of quinin, the patient dying literally saturated with the drug and thoroughly cinchonized. Dr. Osler, the highly gifted and capable authority quoted to support the points of the editorial, has given absolute testimony to the fact that quinin *will not* remove the crescentic forms from the blood and that the fever will persist in spite of its use. Writing to me in answer to a communication, he replies to the question as to whether in his experience there was a form of malarial fever that resisted quinin: "Yes, the estivo-autumnal resists in certain phases. The organism—crescents—do not disappear." I take this to mean that there is a form of malaria which will not yield to quinin no matter how employed. The action of quinin upon certain types of malaria is very positive and undisputed. There are, however, phases or stages of what was doubtless originally a purely malarial affection, yet the precise nature of the pathologic phenomena soon becomes obscure and we deal with agencies supplementary to those originally and still present.

Exactly what constitutes this addition to the crescents already present in the blood, we have no present adequate answer. We know enough to know that the pathologic condition is not amenable to the therapeusis of quinin, no matter how much or by what avenue it reaches the blood.

Respectfully, J. WELLINGTON BYERS, M.D.

Oxytuberculin.

SANTA CLARA, CAL., March 12, 1898.

To the Editor:—My attention has been drawn to a letter in the JOURNAL about oxytuberculin by Dr. E. H. Smith of Santa Clara, Cal. It is not my custom to reply to such letters, but a few facts will be at least interesting.

There are seven (or more) physicians in this county who have used oxytuberculin. How many of the cases treated by these physicians have been observed by Dr. Smith I am not able to state, nor do I know whether or not Dr. Hirschfelder has diagnosed all the cases of tuberculosis treated by these men. The letter states, "It is a very noticeable fact that all of the cases seem to be diagnosed by one individual, viz., Dr. Hirschfelder."

For myself I shall reply, and will be glad to hear from the others. Dr. Hirschfelder never examined a case for me (nor the sputum) for at least three months after I had used treatment; nor has he ever diagnosed a single case for me. I have several times submitted the samples of sputum to him for satisfaction and for preservation of a slide by him. One case of mine to which Dr. Smith refers as "observed" by him, the letter states "That was a case of 'asthma,' and no positive evidence of tuberculosis at all. This case has been reported cured."

Now this case has never been reported "cured."

Dr. Smith has never examined this patient, and yet he states "These cases are not presented to an unbiased medical profession for diagnosis." What could be more biased than to say that a certain case was "asthma" and not "tuberculosis," without having made any examination. Let us see whether or not this was a case of "asthma;" and, notice, that before oxytuberculin or Dr. Hirschfelder were known to me at all, this case was diagnosed "consumption" early in 1896. Dr. P. M. Lusson of San Jose, examined the patient and gave his diagnosis as "pulmonary tuberculosis in both lungs." I was not acquainted with the patient at that time. On Aug. 6, 1896, this patient presented herself at my office for examination. My notes taken at the time are as follows: Temperature 101.5 degrees; pulse 104; cough very annoying; losing flesh; expectoration abundant; left lung affected to third rib; right lung to fourth rib; nocturnal paroxysms of asthma causing patient to smoke asthma powder from six to fifteen times a night; weight about 103 pounds; usual weight for five years 110 pounds; microscope shows abundant tubercle bacilli. Diagnosis: Pulmonary tuberculosis, complicated. Treatment: Outdoor life, generous diet, tonics, creosote carb., protonuclein, etc., with cough mixtures.

November 6, gradual decline; weight about 100 pounds; no improvement.

November 16, tubercular pleurisy, severe; tubercular foci throughout both lungs.

Dr. I. N. Frasse of San Jose, called in consultation. Diagnosis according to written statement: "a clear case of phthisis." (He examined the sputum also.)

The doctor told the husband of the patient that in his opinion she would not live much longer than one week. He did not recommend any drugs, but agreed to use oxytuberculin or anything, as the case was far gone. After three months treatment, the patient did her own housework. In six months weighed 122 pounds, or twelve more than for four years.

The asthma has returned only two or three times in 15 months and then only after a heavy meal, and the attack was completely stopped by one treatment of oxytuberculin, within fifteen minutes after administration. The patient feels well, sleeps

ten hours daily uninterruptedly and does her own work. No medicines were used for six months during the treatment with oxytuberculin. Dr. Frasse has examined the patient twice since his first consultation at intervals of about three months, and writes me, "at my last examination some time ago I could still detect some bronchial breathing at the apex of the right lung, posteriorly, but otherwise the patient had made most excellent progress." Four other physicians examined this patient during the first four months of the treatment, each one unhesitatingly saying that it was a case of "tuberculosis."

Is it fair or "unbiased" to call this a case of "asthma?" Does "positive evidence" of tuberculosis only come from an examination by Dr. Smith and none other? Would you submit a case for an opinion to a man who will diagnose the case without an examination?

In every case that I have treated with oxytuberculin there is as much proof of tuberculosis and confirmatory evidence as in the above case, and I challenge proof that the tuberculosis did not exist in every case. Of four cases under my care in which oxytuberculin was used, two made marked improvement, one considerable improvement, one very slight improvement. With Koch's T. R., several cases have made some improvement. My own experience does not lead me to say that oxytuberculin will cure a single case of tuberculosis, nor do I pretend to champion the remedy. Facts are better than statements. Until we find a remedy that will cure every case, it is better to wait for time to reveal the worth of every treatment. Where there are no contra-indications, why not use combined means, medicine, diet, exercise, hygiene, and any available specific treatment? The idea is not to prove the worth of any one remedy, but to cure the patient. Invariably, however, I explain to the patient that no guarantee of cure can be given. Yours respectfully,

D. A. BEATTIE, M.D.

Advertising in the Secular Press.

TECUMSEH, MICH., March 10, 1898.

To the Editor:—In these days of push, of progress, of smokeless gunpowder, of climbing to the pinnacle of fame by every available means, is it not right, yea, is it not the only certain method by which a young and ambitious medical graduate can lift himself bodily into the aerie of success, by advertising his wares in the secular press where he locates, and informing his patrons through the press of his undoubted ability after the following manner?

Dr. Obediah Hayseed, assisted by Dr. Mossback and Dr. Falstaff of Rouge's Hollow, successfully removed a tumor from Mrs. George Gumbo. The patient is doing nicely. Is this not the proper method of becoming eminent with a single bound?

Respectully yours, J. F. JENKINS, M.D.

PUBLIC HEALTH.

A New Source of Contagion.—The *Méd. Moderne* relates the case of a child with scarlet fever. As a new dress was required, the mother had a number sent up from the stores and tried them on the child, returning all but the one she decided to buy.

The Favorable Effect of Hygienic Measures on the Eyesight is emphasized by a report recently published detailing the results of the examination of the eyes of school children practiced in Munich two or three times a year for the last sixteen years. The average of vision is constantly rising.

Free Sanitaria for Nervous Affections.—Munich is soon to have an institution to receive male cases of functional neurosis, at a nominal sum, one mark a day. A minister, Ringseisen, has placed a couple of villas at the disposition of the committee in charge of the project, and money has been subscribed to build another. As soon as sufficient funds have been collected to maintain them, they will be put in operation, excluding alcoholics and epileptics.—*Klin. Therap. Woch.*, January 30.

Health in Chicago.—The report for January gives the total deaths during the month as 1835, or 1.13 per 1000. The rate for the corresponding month in 1897 was 1.25. Of these 1835 deaths, 390 were of persons under one year old, and 217 between one and five years. The chief causes were: Pneumonia, 248; nervous diseases, 226; consumption, 202; heart diseases, 124; bronchitis, 92; diphtheria and membranous croup, 68; cancer, 67; acute intestinal diseases, 79; typhoid fever, 29.

Health in Michigan.—The report for February gives the diseases most prevalent during the month as rheumatism, influenza, neuralgia, bronchitis, tonsillitis, pneumonia, pleuritis, diarrhea and pulmonary consumption. Compared with the report for January, consumption was more prevalent, being reported at 117 places, while measles was reported at 85 places, scarlet fever at 68, diphtheria at 60, typhoid fever at 53, whooping cough at 27, and smallpox at one place. Compared with the average for February for twelve years, whooping cough, intermittent fever, remittent fever, consumption, scarlet fever, diarrhea and pneumonia were less prevalent.

Sex and Population.—The London *Post* in the turbulent wake of the statistician gives some space to the disparity of the sexes, but wrongly credits Egypt as being the only country of the world where the men exceed the women. The avowed number foots up as high as 160,000. Let us dip into the question somewhat. The alleged preponderance of men in the United States is held to be 1,513,510, and in Australia the comparison suffers still more. But by the last Italian census, certainly the most accurate of all, the excess of male over female inhabitants is in the proportion of 50.20 to 49.80. In Greece the percentage of male inhabitants is higher even than it is in Italy, and so it is, too, in Servia and Roumania. In all the South American countries, with the exception of Chile and Venezuela, men outnumber the women, and this is particularly the case in Brazil and in the Argentine Republic. In England's South African Colonies, in India, and in Canada, as well as in Egypt, the number of male inhabitants exceeds the number of female inhabitants. Egypt's claim to any particular prominence in this matter is based on a very slender foundation at best. By the census previous to the last one it was shown that the total number of male inhabitants was 3,402,000 and the number of female inhabitants was 3,416,000. In a population, therefore, of nearly 7,000,000 the excess of female inhabitants at that time was 14,000, and if since then the scale has been turned slightly and now shows a small preponderence of men, there is certainly nothing in it which particularly calls for any great demonstration of surprise. The only commentary after all seems to be that the masculine element is reasonably content with an unembarrassed struggle for existence.

State regulations of Tuberculosis.—Dr. J. M. Withrow, Health Officer of Cincinnati, in the Ohio Sanitary Bulletin for February, says:

"Fourteen States have bovine laws and regulations, and issued circulars for public instruction with reference to tuberculosis in man, i. e., California, Colorado, Connecticut, Iowa, Maine, Massachusetts, Michigan, New Jersey, New Hampshire, New York, Pennsylvania, Rhode Island, Virginia and Wisconsin. Two States have bovine laws, but do nothing toward stopping the spread of tuberculosis in man, i. e., Minnesota and South Dakota. Tennessee has bovine laws, but can not enforce them for lack of funds, and the Health Board has only issued circulars upon the prevention of tuberculosis in man and beast. The District of Columbia and Oklahoma have a law prohibiting the sale of tuberculous milk, but nothing concerning the disease in man and cattle. Delaware, Indiana, Kentucky, Louisiana, New Mexico, Ohio, Texas and West

Virginia issue circulars of instruction concerning tuberculosis in man, but no steps have been taken concerning bovine tuberculosis. The remaining sixteen States have apparently done nothing to prevent the spread of tuberculosis either in man or beast. In about one-third of the large cities of the United States nothing has been done toward securing the prevention of consumption. . . . In Ohio . . . there is no law to prevent the sale of tuberculous milk, and no means are taken to prevent the spread of tuberculosis among cattle, and so far as tuberculosis in the human being goes, there is no legislation statutory in character upon this subject. . . . The Ohio State Board has issued circulars of instruction on this subject, but their dissemination has not been general enough or frequent enough to create very much public feeling upon the subject. In the city of Cincinnati . . . a board of health regulation has been adopted placing the obligation of physicians to report cases of tuberculosis upon the same plane as cases of diphtheria, scarlet fever and other infectious diseases."

Typhoid Fever at Philadelphia.—There appears to be no doubt in the minds of experts that the Schuylkill River water-supply has been the cause of the high fever rate at that city. That river, near the intakes for Philadelphia, has been shown to be polluted from end to end, and this foul, sewage-laden water is served, unpurified, to the patient tax-payer. Last November an accident occurred by which sewage was pumped directly into a reservoir and thence into the city water mains to the consumer; and this accident seems to have been a principal cause of the present outbreak. It is also known that further up the river typhoid is on the increase, and this adds another factor to the cause of the epidemic. But to enumerate these causes is of no avail. The Schuylkill is polluted and every one has known the fact for years. Every one also knows that the practical remedy for the situation is either a thorough filtration or an entirely new plant. Since the beginning of the present outbreak, the first week of last December, 1134 new cases of enteric fever have been reported in the city of Philadelphia, and of this number 675 have occurred during the first four weeks of the new year, or an average of more than 168 new cases weekly up to the present time. As a striking comparison, we may state that during two weeks of the present month New York City, exclusive of Brooklyn, etc., with a population twice that of Philadelphia, reported a total of thirty-six new cases of typhoid, while Philadelphia for the corresponding period reported no less than 366 new cases. To further the comparison, two wards in the infected district of Philadelphia, having a combined total population of 100,000, in one week surpassed the total roll of enteric fever cases reported among the 2,000,000 inhabitants of New York City for a period of two weeks. To make the contrast still plainer, in one recent week in New York City only six new cases of typhoid were reported from the densely populated tenement districts below Fourteenth Street, where the nature of the surroundings and mode of life offer every advantage to the development of filth diseases. On the other hand, the section of Philadelphia in which typhoid is most prevalent is an area not of crowded tenements and of indifferent hygienic environment, but of separate small dwellings, occupied, as a rule, each by a single family, and pronounced by the corps of health inspectors to be of more than average healthfulness.—*Medical News*, January 29.

The **American Public Health Association.**—The *Public Health Journal* (January) has a personal item respecting the president-elect of the American Public Health Association, Dr. Charles A. Lindsley of New Haven, of which the following is a part: Among the numerous honorable positions heretofore held by Dr. Lindsley, he was a vice-president of the AMERICAN MEDICAL ASSOCIATION in 1871–72, with which society he united as long ago as 1855. He is one of the oldest living members of the association of which he has lately been chosen president, having joined in 1875. He has made many and important contributions to sanitary and medical literature, to which the annual and other reports emanating from his State board of health and medical society will testify. Of the latter body he was its centennial president in 1892. With the State board he has been connected fully twenty years, and has been its secretary since 1884. With the interests of medical education he has been identified since 1860, and has been for twenty years dean of the Yale University medical faculty. He is a descendant of Francis Lindsley, who came to America in 1666 and settled in New Jersey. He was born in Orange in 1826, and was graduated from Trinity College, Hartford, in 1849, receiving a master's degree in 1852. Then he began the study of medicine and after the close of a term in the College of Physicians and Surgeons, New York, received his degree of M.D. from Yale. Since then he has been a member of the Yale faculty and has lived in New Haven. From 1860 to 1883 Dr. Lindsley was professor of materia medica and therapeutics at Yale, and since 1883 he has been professor of the theory and practice of medicine at that university.

Decline of Typhus Fever in the Cities of Great Britain.—It may be said without exaggeration that five-sixths of the medical profession of this country have never seen a case of typhus fever. And yet the time is not so very remote, say in the sixties, when that fever was a dreaded visitant among the medical internes of institutions, like Bellevue Hospital, New York, that were brought into contact with immigrants from Great Britain having "ship fever," as it was then frequently styled. About the time that this fever began to drop out of the ken of the American profession, along with relapsing fever, the teachers in the medical schools began to recognize the terms "sanitation," "public hygiene," a "preventive medicine," and the like, and to treat briefly of those subjects. This was possibly not much earlier than 1870, and not much earlier, therefore, than the founding of the American Public Health Association. Regarding the decadence of typhus fever, Dr. Bailey of Bilston has prepared the following sketch, a portion of which we quote from the *Lancet*, as follows: "In 1837, typhus fever prevailed in many parts of England, and in 1838 no less than 1271 per million of the population died from it. In the years 1846–48 a frightful epidemic occurred in Ireland on the failure of the potato crop. It spread to England where, in 1848, 786 cases were admitted to the London Fever Hospital alone. In that hospital as many as 14,589 cases were treated during the period 1862–70. In Glasgow, too, the death rate per million for the five years 1855–59 was 1265, and for the five years 1860–64, 1576. These figures show the extremely fatal character of this most formidable disease. Since 1869 this fatality has markedly and continuously decreased, until now it has almost reached the vanishing point. In that year the deaths in England and Wales were 4281, in 1885 they were only 318, and the mean rate for the quinquennium 1891–95 had actually been reduced to 4 per million of persons living. . . . Surely if sanitarians could lay claim to no other achievement they would be entitled by this to an honorable place in the history of the Victorian era."

Caution to be Exercised by Boards of Health in Destroying Property.—The language of the Arkansas statute is that municipal corporations shall have power to cause "any nuisance to be abated." From this and the other provisions relative thereto, the supreme court of the State holds, in the case of Gaines vs. Waters, decided Jan. 8, and rehearing denied Feb. 19, 1898, that the city council is authorized to confer upon the board of health power to abate nuisances dangerous to the health of the inhabitants of the city. It takes the view that a board of health is an instrumentality of the city, and that the city has the right

to make general rules to be carried out by the board of health as its agent. The board being but an agency of the city, its acts in reference to the abatement of a nuisance are, in effect, the acts of the city itself. The contention that a city council can not delegate to the board of health the power to determine judicially that a certain structure or other thing is or is not a nuisance, the supreme court goes on to say, has no bearing on the case, for the reason that the council itself has no such power, nor does the board of health in abating nuisances, exercise judicial powers within the usual meaning of such term. There is no requirement that parties interested shall be given notice and an opportunity to be heard, nor does the statute contemplate a judicial hearing before the city council or board of health in matters of this kind. On the other hand, there is no authority to destroy property not a nuisance, and the resolution of a board of health that a house, for example, is a nuisance, the court says, does not make it a nuisance unless it be one in fact, nor is such resolution a judicial determination of that question. This leads the supreme court to make the even more practical, general suggestion, that it follows, therefore, as a matter of common prudence, that in summary proceedings by a city council or board of health to abate a nuisance, when the imposing party has no opportunity to be heard, that great caution should be exercised that property may not be unnecessarily destroyed, and further, for the reason that if it should turn out that a house declared by either of these bodies to be a nuisance was not such in fact, and its removal unnecessary, those removing it might become liable for an action in damages.

Kentucky Local Boards of Health entitled to Compensation.—Section 2055 of the Kentucky Statutes, among other things, provides that, "The local board shall receive such compensation for such services as the county court in which the local board is established shall in their discretion, determine." From this, the court of appeals of Kentucky concludes that the legislature intended that the members of the local board of health should be fairly compensated for the services they are required by law to render. The discretion of the fiscal court with reference to the compensation to which such board is entitled, it further declares, in Stephens vs. Allen, Jan. 27, 1898, is not an arbitrary one, but is a sound judicial discretion, and one that can be controlled.

The Water-Supply Laboratory of Brooklyn.—With infinite pains a biologic and chemic laboratory was established at Rockville Center, L. I., for the purposes of a scientific supervision of Brooklyn's supply of drinking water. Under the new régime of the Greater New York, this plant has been wiped out. It had been in operation over a year and was considered by the former health commissioner, Dr. Z. Taylor Emery, as being one of the most sanitary of his accomplishments in his four years' service. As the *Medical News* states, this plant connoted the opinion of those who have discovered that the proper location for an institution of this nature is upon the watershed itself and that the chemic and bacteriologic researches should be accompanied by frequent inspection of all suspected feeders and ponds. The investigations have been conducted by Dr. Hibbert Hill, formerly in the employ of the Louisville Water-Supply Commission, an expert in bacteriology, assisted by Dr. Ellms, chemist. Dr. Ezra H. Wilson, who recently resigned from the health department to give his sole attention to the work of the Hoagland Laboratory, was for a time in charge of the Rockville biologic work, but latterly was appointed to the honorary position of consulting bacteriologist. The names of these three officials are signed to an important report of 200 pages setting forth the organization and results of the laboratory. This report is replete with tabular and other technical matters, and will be especially valuable to water-biologists and engineers; it may without exaggeration be characterized as a "State paper" of permanent value. As the new charter of New York City places the sanitary supervision of water-supplies in the board of health, it is to be hoped that this important function will not be slighted. It is beyond doubt a mistaken policy to neglect this line of sanitary work until the water becomes suspected or polluted, and popular panic and outcry, to say nothing of decimating epidemics, make its resumption necessary.

NECROLOGY.

JOHN DUGAN SKEER, M.D., Chicago, March 7, aged 73 years. Dr. Skeer was graduated from Cincinnati Medical College and the Nashville College of Medicine. Throughout the Civil War he had charge of Hospital No. 9, at Nashville.

SAMUEL H. DISMOND, M.D., Richmond, Va., March 1, aged 44 years. He was graduated from the Richmond Institute in 1879 and as Doctor of Pharmacy and Doctor of Medicine from Harvard University in 1883.

W. O. RODGERS, M.D., Omaha, Neb., March 10, of rheumatism of the brain. Dr. Rodgers was chief medical director of the Woodmen of the World, a member of the AMERICAN MEDICAL ASSOCIATION, and was graduated from the Medical Department of the University of Buffalo in 1883.

WALTER O. RICHARDS, M.D., March 2, aged 78 years. Dr. Richards had practiced his profession in Waterloo and Blackhawk County for forty-three years. He was a member of the County Medical Association, also District, State and National Associations.

S. D. SMITH, M.D., Piqua, Ohio, February 6, age 69 years. He was graduated from the Medical Department of the University of Pennsylvania in 1863; was appointed assistant surgeon in the U. S. Navy and was assigned to duty on the *Brandywine*, which service he left by resignation. He was a member of the AMERICAN MEDICAL ASSOCIATION. At a meeting of the Medical Societies of Miami and Shelby Counties February 9, the following memorial report was adopted:

Resolved, By our Joint Society, that in the death of our associate and fellow member, Dr. S. D. Smith, while bowing in humble submission to the will of our Heavenly Father, that Great Physician before whom we must all appear and whose immunizing power alone can divest mortality of its sting, we have sustained a personal loss and would drop a tear upon the grave of our departed brother and place on record our appreciation of those high and noble qualities of heart and head which make up the life of one so well known as an accomplished physician, whose irreproachable life exemplified the value of a good citizen, who in his social relations was refined, genial and brilliant. One who was a sincere and faithful friend, removed from us at a time of life when many more years of active usefulness were to be hoped for; all who have been associated with him will ever hold in cherished remembrance his varied attainments and those higher moral qualities which rendered him not less endeared than admired.

Resolved, That we ever cherish the memory of our late associate and tender to his bereaved family our warmest sympathy in their great loss.

JAMES E. SHELLENBERGER, M.D.
J. F. GABRIEL, M.D.
D. R. SILVER, M.D.
F. M. WRIGHT, M.D.
O. TYDINGS, M.D.
} Committee.

JOHN H. MEASE, M.D., licentiate of the Oswego County Medical Society, 1875, died in Oswego, N. Y., March 11, after a practice there of twenty-four years. His wealth, according to the daily prints, was made by ventures in the early days of California, and by sales of horses to the government during the war.

HENRY DAVID KAHLER, M.D., Western Reserve Medical College, 1895, a native of Bolivar, Ohio, died in Shelby, Ohio, where he had recently located, February 20, aged 32 years.

CHARLES H. CALMAN, M.D., died in New York City, March 9, aged 21 years.

GEORGE BOWERS, M.D., Oshkosh, Wis., March 8, aged 29 years.——W. H. Bunker, M.D., Hartwell, Ohio, March 6.——

Eugene Clark, M.D., New Orleans, March 7.——Charles B. Jennings, M.D., Dubuque, Iowa, March 11, aged 64 years.——Sylvester Laning, M.D., Kingman, Kans., March 4, about 50 years old.——Anthony Weiskopf, M.D., Kenosha, Wis., February 26.——F. B. Wood, M.D., Garrett, Ind., March 1.——J. H. Hauptmann, M.D., Erie, Pa., March 6, aged 34 years.

DEATHS ABROAD.—Sir Richard Quain, Bart., physician extraordinary to her majesty, president of the general medical council and editor of "The Dictionary of Medicine." He was born Oct. 30, 1816, was a fellow of several learned societies and the author of numerous medical and scientific works.

ASSOCIATION NEWS.

Fifty-first Annual Announcement.

OFFICE OF THE PERMANENT SECRETARY,
1400 PINE STREET, PHILADELPHIA.

The Forty-ninth Annual Session will be held in Denver, Colo., on Tuesday, Wednesday, Thursday and Friday, June 7, 8, 9 and 10, commencing on Tuesday, at 10 A.M.

"The delegates shall receive their appointment from permanently organized State medical societies, and such county and district medical societies *as are recognized by representation in their respective State societies*, and from the medical departments of the Army and Navy and the Marine-Hospital Service of the United States.

"Each State, county and district medical society entitled to representation shall have the privilege of sending to the ASSOCIATION one delegate for every ten of its regular resident members, and one for every additional fraction of more than half that number; *Provided*, however, that the number of delegates for any particular State, Territory, county, city or town shall not exceed the ratio of one in ten of the resident physicians who may have signed the Code of Ethics of the ASSOCIATION."

Members by Application.—Members by application shall consist of such members of the State, county and district medical societies entitled to representation in this ASSOCIATION as shall make application in writing to the Treasurer, and accompany said application with a certificate of good standing, signed by the president and secretary of the society of which they are members, and the amount of the annual subscription fee, $5. They shall have their names upon the roll, and have all the rights and privileges accorded to *permanent members*, and shall retain their membership upon the same terms.

The following resolution was adopted at the Session of 1888:

That in future each delegate or permanent member shall, when he registers, also record the name of the Section, if any that he will attend, and in which he will cast his vote for Section officers.

Secretaries of medical societies, *as above designated*, are earnestly requested to forward, *at once*, lists of their delegates.

Addresses.—Presidential Address, Geo. M. Sternberg, Washington, D. C. Address in Surgery, J. B. Murphy, Chicago. Address in Medicine, J. H. Musser, Philadelphia. Address in State Medicine.——

Committee of Arrangements.—J. W. Graham, Denver, Colo.

AMENDMENTS TO THE CONSTITUTION AND BY-LAWS.

Offered by W. L. WELLS:

Art. IV.—Officers. Amend to read "Each officer shall hold his appointment for one year, and until another is elected to succeed him."

Offered by H. B. ELLIS:

Art. IX.—Conditions for further representation. "Any State or local medical society, or other organized institution whose rules, regulations and code of ethics agree in principle with those of this ASSOCIATION may be entitled to representation on the advice or agreement of the Judicial Council."

"That the name of the Section on Dental and Oral Surgery be changed to that of Section on Stomatology."

Offered by L. D. Bulkley:

"That all new business shall be introduced not later than the third day of the session."

☞At the last session it was agreed that all committees having reports of public interest, and particularly matters pertaining to legislation, be instructed to make their reports on the second day at the General Session.

EXTRACTS FROM BY-LAWS.

"The Chairman of each Section shall prepare an address on the recent advancements in the branches belonging to his Section, including suggestions in regard to improvements in methods of work, and present the same to the Section over which he presides, on the first day of the annual meeting. The reading of such address not to occupy more than forty minutes."—*By-Laws.*

"It shall be the duty of every member of the ASSOCIATION who proposes to present a paper or report to any one of the Sections to forward either the paper or a title indicative of its contents and length (not to exceed twenty minutes in reading) to the Secretary of said Section, at least one month before the annual meeting at which the paper or report is to be read."—*By-Laws.*

4.—The Publication of Papers and Reports. "Every paper received by this ASSOCIATION and ordered to be published, and all plates or other means of illustration, shall be considered the exclusive property of the ASSOCIATION, and shall be published and sold for the exclusive benefit of the ASSOCIATION."—*By-Laws.*

WM. B. ATKINSON, Permanent Secretary.

Section on Surgery and Anatomy.—All titles for papers in the Section on Surgery and Anatomy must be in my hands by May 1. Inasmuch as my program must be in the hands of the Secretary of the ASSOCIATION by May 7, I must have a week for its preparation. CLAYTON PARKHILL, Sec'y, Denver, Colo.

Section on Ophthalmology.—The undersigned would be glad to have the titles of papers for the Ophthalmic Section sent to one of them as soon as possible, in order that they may appear in the preliminary program. The subjects specially set for discussion at the meeting are: The Uses of Electricity in Ophthalmology; and The Treatment of Affections of the Lachrymal Apparatus. Papers on these or any other subjects of special interest to the Section will be welcome. A number of interesting contributions have already been promised and everything points to a most successful meeting. R. L. Randolph, M.D., Secretary, 816 Park Avenue, Baltimore, Md., H. Gifford, M.D., Chairman, 1404 Farman Street, Omaha, Neb.

Notice to all Interested in Neurological Progress.—All who classify themselves under the above caption will confer a favor upon the undersigned by sending a brief memorandum, with accurate reference data attached, of actual progress in neurology and neuristry for the past year, or any facts which they may consider so classified, to be epitomized or referred to in his forthcoming Presidential Address to the Section on Neurology and Medical Jurisprudence of the AMERICAN MEDICAL ASSOCIATION at its meeting in Denver in June *proximo*. Communications are also solicited to be presented to the Section either in person or by letter. C. H. Hughes, M.D., Chairman of Section on Neurology and Medical Jurisprudence, 3857 Olive Street, St. Louis, Mo.

Section on Neurology and Medical Jurisprudence—Preliminary Program.—The afternoon of the second day will be devoted to a joint session with the Section on Obstetrics and Diseases of Women for a discussion of The Relation of Pelvic Disease to Nervous and Mental Affections. This will be opened by six short papers, three from each Section. Those contributed by the Neurological Section will be as follows:

Is Pelvic Disease a Cause of Nervous and Mental Affections? by Frederick Peterson, New York.

Are Nervous and Mental Diseases Cured by Pelvic Operations? by F. X. Dercum, Philadelphia.

Nervous and Mental Diseases Following Pelvic Operations, by Harold N. Moyer, Chicago.

GENERAL PROGRAM.

Address of the Chairman, by Charles H. Hughes, St. Louis.

Double Consciousness and the Dual Action of the Brain, by David Inglis, Detroit.

Those Cerebral Neuroses Miscalled Insanities, by Clarke Gapen, Madison, Wis.

Relation of Neurasthenia to the Organic Neuroses and the Acute Psychoses, by James G. Kiernan, Chicago.

The Relation of Neurasthenia to Insanity, by John Punton, Kansas City.

Insanity; Borderland Symptoms; How Best Met, by W. S. Watson, Fishkill-on-Hudson, N. Y.

Neurasthenia; Its Co-relation to the Physiology and Pathology of the Reproductive Organs, by F. Savary Pearce and Harry D. Beyea, Philadelphia.

The Influence of Sexual Disorders upon the Nervous System; Its Nature and Extent, by J. R. Buist, Nashville, Tenn.

Reflex Neuroses in Women, by I. N. Upshur, Richmond, Va.

Uterine Hyperesthesia, by Ephraim Cutter, New York.

Functional Nervous Diseases That Are Associated with Pregnancy, by Samuel Goodman, Boston.

Functional Nervous Disturbances in Pulmonary Invalids, by Sherman G. Bonney, Denver.

Vasomotor Storms, by Frank R. Fry, St. Louis.

Neuralgia and Nerve Cries, by Charles H. Lodor, Chicago.

The Nervous Element in Hyperpyrexia, by C. C. Hersman, Pittsburg.

Neural Dynamics, by W. J. Herdman, Ann Arbor, Mich.

An Examination of Some So-called Faith Curists and Mental Scientists in the Light of Functional Pathology of the Brain, by Louis F. Bishop, New York.

The Stress of Modern Civilization as a Factor in the Causation of Insanity, by Frederic S. Thomas, Council Bluffs, Iowa.

The Question of Inheritance in Degeneracy of the Nervous System, by Ira Van Gieson, New York.

A Form of Degeneracy, by Eugene G. Carpenter, Cleveland, Ohio.

Melancholia, by Frank P. Norbury, Jacksonville, Ill.

Some Experiments in Uric Acid Excretion on a Milk Diet and in Melancholia, by F. Savary Pearce, Philadelphia.

The Result of Blood Examinations in Some Forms of Insanity, in Connection with the Administration of Thyroid Extract, by Samuel Bell, Newberry, Mich.

The Blood Changes in Nervous Diseases, by L. Bremer, St. Louis, Mo.

Toxins of Erysipelas in the Treatment of Insanity, by Oscar A. King, Chicago.

Travel as a Therapeutic Measure in Psychoses, by Richard Dewey, Chicago.

Moral Insanity in Inebriety, by T. D. Crothers, Hartford.

Massage Combined with Psycho therapeutics in the Treatment of Nervous and Mental Affections, by Geo. V. I. Brown, Duluth, Minn.

Electricity an Important Factor in Therapeutics, by W. S. Watson, Fishkill-on-Hudson, N. Y.

Two Cases of Hydrophobia with a Suggestion as to Treatment, by Hugh T. Patrick, Chicago.

Paralysis Agitans, by Sanger Brown, Chicago.

Exophthalmic Goiter, by J. B. Marvin, Louisville.

Hysteria in Children, by J. G. Biller, Cherokee, Iowa.

Aboulia in its Relation to Hysteria, by L. Harrison Mettler, Chicago.

The Opium Treatment of Epilepsy, by Frank C. Hoyt, Clarinda, Iowa.

Modern Treatment in Epilepsy, by Curran Pope, Louisville, Ky.

Symptoms Indicating Organic Nervous Disease, by Howell P. Pershing, Denver.

Paretic Dementia and Tabes, Their Genuine and Counterfeit Varieties, by Arthur E. Mink, St. Louis.

Some Considerations of the Symptomatology in the Diagnosis of Tabes, by J. M. Aikin, Omaha.

Report of a Case of Intra-dural Tumor of the Spine; Removal, Complete Recovery; Exhibition of the Patient; by J. T. Eskridge, Denver.

The Finer Structure of the Nerve-cell in Health and in Disease, by Lewellys F. Barker, Baltimore.

The Neuroglia in Health and Disease; by Maximilian Herzog, Chicago.

The Reclassification of Some Organic Nervous Diseases, by Chas. K. Mills, Philadelphia.

Cerebral Meningitis; Some Suggestions on Diagnosis and Treatment, by D. R. Brower, Chicago.

Apoplexies Without Paralysis; by William N. Bullard, Boston.

Syphilis of the Nervous System as the General Practitioner Sees It, by C. Travis Drennen, Hot Springs, Ark.

Aphasia; With Report of an Interesting Case, by F. E. Coulter, Omaha.

The Orthopedic Treatment of Infantile Spinal Paralysis, by John Ridlon, Chicago.

Lumbo-Abdominal Permanent Drainage in Hydrocephalus, by Alex. Hugh Ferguson, Chicago.

Adiposis Dolorosa, by Augustus A. Eshner, Philadelphia.

The Status of the Medical Expert in the Different States, by Edward B. Angell, Rochester, N. Y.

How Shall Consultations be Conducted by Those Who are to Testify as Experts? by John L. Hildreth, Cambridge, Mass.

The Medicolegal Value of the Roentgen Rays, by Geo. H. Stover, Denver.

The Medicolegal Aspect of Senile Dementia, by W. B. Fletcher, Indianapolis, Ind.

Characteristics of Headaches According to their Origin, by Henry Gradle, Chicago.

Ocular Headaches, by William H. Wilder, Chicago.

Headaches Caused by Errors of Refraction by J. Elliott Colburn, Chicago.

Some Causes of Wry-neck, by C. M. Hobby, Iowa City, Iowa.

A Case of Acromegaly, by Henry W. Coe, Portland, Ore.

There will also be a symposium on brain tumor, the details of which have not yet been completed.

HUGH T. PATRICK, M.D., Sec'y.

Section on Diseases of Children—Preliminary Program.—Address of Chairman, by J. P. Crozer Griffith, Philadelphia, Pa.

The Influence of Dystocia in the Causation of Infantile Diseases, by Joseph Eve Allen, Augusta, Ga.

Thyroid Treatment in Early Myxedema and Cretinism in Young Children, by Frederic Bierhoff, New York City.

Blood Examinations in Pediatric Practice, by S. E. Woody, Louisville, Ky.

Of the Value of Eye Symptom in Meningitis, by A. Edward Davis, New York City.

Some Additional Researches on the Poisons Found in Milk and Milk Products, by Victor C. Vaughan, Ann Arbor, Mich.

Tubercular Arthritis in Children, by John Ridlon, Chicago, Ill.

Some Skin Eruptions which are Confounded with Infantile Syphilis, by Charles H. Allen, New York City.

Preventive Treatment of Tuberculosis in Children with Hereditary Predisposition, by John A. Robison, Chicago, Ill.

Fracture of the Clavicle in Children, with Especial Reference to Treatment by a Modification of Sayre's Method, in over 200 Cases, by A. Ernest Gallant, New York City.

Discussion of above by Charles Power, Denver, Colo.

Whooping Cough, R. B. Gilbert, Louisville, Ky.

Eczema in Four Branches of a Family, by Ella M. Patton, Quincy, Ill.

Report of Some Odd Results in the Treatment of Diphtheria with Antitoxin, by Henry Anthony Strecker, Philadelphia, Pa.

Influenza in Children, by James J. Concannon, New York City.

The Treatment of Congenital Infantile Syphilis, by Charles S. Shaw, Pittsburg, Pa.

Mechanical Management of Difficult Defecation in Infants, by Thomas Charles Martin, Cleveland, Ohio.

Subnormal Temperature in Infectious Diseases, by Henry H. Freund, Philadelphia, Pa.

The Influence of the Climate of Colorado on Diseases of Children, by C. F. Gardiner, Colorado Springs, Colo.

Tetany in a Child 18 Months Old, by Edward H. Small, Pittsburg, Pa.

Tetany in Infancy, by J. Lovette Morse, Boston, Mass.

Pneumonia—Laborde Treatment of Artificial Respiration, by A. E. Roussel, Philadelphia, Pa.

Clinical Studies of Multiple Neuritis in Young Children, by Annie S. Daniel, New York City.

The Treatment of Tuberculosis in Children in New York City; Remarks Based on Ten Years' Experience, by Louis Fischer, New York City.

The Treatment of Congenital Talipes, by Harriet E. Garrison, Dixon, Ill.

The Debility of Adolescence, by Louis Faugeres Bishop, New York City.

Discussion of Intubation and Diphtheria, by Solomon Solis Cohen, Philadelphia, Pa.

The Diagnostic Value of Tuberculin, by Dillon Brown, New York City.

Some New Facts Concerning Scarlet Fever, by Joseph William Stickler, Orange, N. J.

Tuberculosis of the Iris, by A. C. Thompson and Samuel J. Cittelson, Philadelphia, Pa.

Formative Nutrition, by H. W. Scalfe, Chicago, Ill.

Tubercular Peritonitis, by F. F. Lawrence, Columbus, Ohio.

Cyclic Vomiting in Children, by Charles Godwin Jennings, Detroit, Mich.

Auto-Infection vs. Typhoid Fever as Seen in Young Children, by W. C. Hollopeter, Philadelphia, Pa.

Discussion in Diphtheria and Tubercular Diseases, by Edwin Klebs, Chicago, Ill.

Data Derived from One Hundred Cases of Laryngeal Diphtheria, Including Forty-five Intubations, by Rosa Engelmann, Chicago, Ill.

Management of Infectious Diseases in Children, by I. N. Love, St. Louis, Mo.

Is the Use of the Term "Typhoid Pneumonia" Justifiable? A Case in Point, by Henry E. Tuley, Louisville, Ky.

Neurotic Purpura, by Francis A. Thompson, Milwaukee, Wis.

Mortality in Children Due to Neglect, for Which the Physician is Responsible, by W. A. Dixon, Ripley, Ohio.

Dentition, by Joseph Clements, Kansas City, Mo.

Conservations in Diphtheria, by H. D. Jerowitz, Kansas City, Mo.

Demonstration in the Method of Auscultation and Percussion for Heart and Lungs, by Herbert B. Whitney, Denver, Colo.

Discussion of Dr. Whitney's Method, by J. N. Hall, Denver, Colo.; John H. Musser, Philadelphia, Pa.; James C. Wilson, Philadelphia, Pa.; J. P. Crozer Griffith, Philadelphia, Pa.

What Influence do Stimulants and Narcotics Exert on the Development of the Child, by E. Stuver, Rawlins, Wyo.

Milk Food in Infants, by Edwin Rosenthal, Philadelphia, Pa.

Gastro Intestinal Chloroform Diarrhea, by Edward L. David, Louisville, Ky.

The Diagnosis and Treatment of Inherited Syphilis, by E. C. Davis, Atlanta, Ga.

Discussion on Intubation and Diphtheria, by Robert Levy, Denver, Colo.

Serum Treatment of Diphtheria, as viewed by the General Practitioner, during the last year, by Alexander McAlister, Camden, N. J.

SOCIETY NEWS.

Florida Medical Association.—The annual meeting of the Florida Medical Association will be held at Jacksonville, Fla., April 26, 1898. R. R. Burroughs, M.D., President; J. D. Fernandez, M.D., Secretary.

The Austrian Congress of Otology discussed the following subjects at the Vienna meeting in February: "Comparative Anatomy of the Labyrinth," "Pigment in the Labyrinth," "Persistent Perforations of the Tympanum," "Traumatic Neuroses," "Cholesteatoma of the Temporal Bone," "Cerebral Deafness," "Anatomy of Acute Tympanitis," "An Automatic Rheostat." Politzer, Gruber and Baginsky were among the speakers.

Congresses Announced.—The fourth International Congress of Physiology will meet at Cambridge, England, August 28 to September 1. The German Congress of Internal Medicine meets at Wiesbaden April 13. Von Ziemssen speaks on medico-legal instruction, Müller and Brieger on intestinal auto-intoxication and antisepsis, and Leo on diabetes mellitus; others on diseases of the cardiac musculature, blood plaques and experimental gastric ectasia. The German Congress of Surgery at Berlin April 13; for particulars address Professor Gurlt, W. Keithstr. 6, Berlin. The French Congress of Gynecology, Pediatry, etc., at Marseilles October 8; president, Professor Pinard. The French Congress of Alienists and Neurologists at Angers August 1. The subjects announced for discussion are: "Post-operative Psychic Troubles," "Arteritis in the Pathology of the Nervous System," and "Transient Delirium from a Medico-legal Point of View." The French Congress of Medicine at Nancy, April 12. Subjects of addresses: "Clinic Forms of Pulmonary Tuberculosis," "Mixed Infections and the Therapeutic Application of Organs with Internal Secretions." The Norwegian Congress of Internal Medicine is announced for August 11 to 13 at Christiana. General secretary, H. Koester, Goeteborg.

BOOK NOTICES.

The Elements of Clinical Diagnosis. By PROF. DR. G. KLEMPERER, Professor of Medicine at University of Berlin. First American from the last (seventh) German edition. With Sixty-one Illustrations. Authorized Translation by Nathan E. Brell, A.M., M.D., and Samuel M. Buckner, A.M., M.D. New York: The Macmillan Company; Chicago: A. C. McClurg & Co. 1898.

As the translators remark, the fact that a work has gone through seven editions in as many years in Germany, is sufficient evidence of its merits, without further comment. They seem to have done their part in an unexceptionable manner. There are no traces in the translation of the involved and difficult language of the original. The book will be, with its convenient form and inexpensive cost, a very acceptable addition to the literature of its subject in our language. There are few works of its compass that are likely to be more serviceable.

Outlines of Rural Hygiene. For Physicians, Students and Sanitarians. By HARVEY B. BASHORE, M.D., Inspector for the State Board of Health of Pennsylvania. With an Appendix on the Normal Distribution of Chlorine, by PROF. HERBERT E. SMITH of Yale University. Illustrated with Twenty Engravings, 5½x8 inches. Pp. vi-84. Extra cloth, 75 cents net. The F. A. Davis Co., Publishers, 1914-16 Cherry Street, Philadelphia; 117 W. Forty-second Street, New York City; 9 Lakeside Building, 218-220 S. Clark Street, Chicago, Ill.

This little work is a very useful one and one very much needed. Indeed, *the* neglected point of sanitation today is the country. In cities the work is attended to by able and well equipped health departments, but rural hygiene is supposed to take care of itself. We bespeak for these "Outlines" of Dr. Bashore a wide circulation and careful attention.

Sexual Neurasthenia (NERVOUS EXHAUSTION), ITS HYGIENE, CAUSES, SYMPTOMS AND TREATMENT, with a Chapter on Diet for the Nervous by GEORGE M. BEARD, A.M., M.D. Edited with Notes and Additions by A. D. ROCKWELL, A.M., M.D. Fifth Edition (with Formulas). Pp. 308. New York: E. B. Treat & Company. 1898. Price $2.

The editor, Dr. Rockwell, says truly that "the fact that each successive edition of this work has been exhausted more quickly than its predecessor, sufficiently indicates its popularity and right to live."

In this edition is for the first time described what the author terms the "depolarizing" method in the treatment of neurasthenic cases. By this method the force of the positive pole is changed, by the use of a hollow-handled or cup-shaped electrode which, when in use, is filled with some electrolytic fluid, as a weak salt solution or weak solution of soda bicarbonate. This method prevents the pain and undue irritation sometimes felt at the point of contact with one of the ordinary electrodes, no matter how widely separated.

MISCELLANY.

Personal.—Professor William L. Nichol, so long identified with the schools of Nashville, Tenn., as a teacher of medicine, will in future lecture and teach exclusively in the Medical Department of the University of the South, at Sewanee, Tenn.

Broth for Cultivating Microbes.—Miquel recommends the following formula for a cultivation broth in bacteriologic researches: Chapoteau's pepton, 40 parts; gelatin, 4 parts; common salt, 10 parts; wood ashes, 1 part; and 2000 parts of water; the broth is made in the usual way.—*National Druggist*, March.

Retirement of Professor Esmarch.—Professor Esmarch of Kiel, one of the veterans of surgery, intends to retire from his professorship very shortly. Esmarch is 75 years old, and has held his chair at Kiel for more than forty years.—*British Medical Journal*, February 12.

An Editor Receives Professorial Honors.—Dr. J. W. McLaughlin of Austin, Texas, has been made professor of practice of med-

icine in the medical department of the University of Texas at Galveston. In accepting this honor, he has had to sever his connection with the *Texas Medical News* as its senior editor. This is a serious loss to our esteemed contemporary. We note, however, that Drs. A. N. Denton and M. M. Smith have been added to its editorial staff, with whose assistance, we feel sure, Dr. Bennett will keep up the standard of the *News*.—*New Orleans Medical and Surgical Journal.*

Paternalism Run Mad.—Representative Parker of Cleveland recently introduced a bill in the Ohio legislature providing for the appointment by the probate court of each county of a board of marriages composed of physicians. To this board, consisting of three members, persons who wish to marry must make application. The board will refuse to grant a license in case either party to the proposed contract has dipsomania, kleptomania, insanity, true or hereditary or resulting from vice; certain blood diseases or tuberculosis. It will charge $2.50 for each license and out of the fund so made each member will be paid a salary of $1000. There is provided a method of appeal to the State Board of Health in case of any refusal to grant the license.

Immunity to the Sting of Bees.—Dr. Langer of Bohemia, stated at the recent Congress of German Naturalists and Physicians, that he found the majority of bee-keepers in his district (Ruschowan) acquire a complete immunity to the stings of those insects, while some seem to have enjoyed that immunity from the first, possibly by inheritance. Of 153 nine had always been insusceptible, 118 had acquired the immunity, twenty-six had not. In some cases it was so complete that when intoxicated men had been stung in from fifty to one hundred places with less suffering than is felt by most persons from flea bites. He found the poison to be an animal alkaloid, and not, as is commonly believed, a formic acid. The best treatment is a subcutaneous injection of a 2 to 5 per cent. solution of potassium permanganate, as this salt in the proportion of 1 to 20 destroys this poison.—*The Practitioner*, February.

The So-called Roentgen Lady.—Latest among the marvels of French origin is *La Femme Roentgen*, a woman who is described as being able to read with ease through opaque bodies. Such, at least, is the story. We are told that Dr. Ferroul of Narbonne has found and has introduced this phenomenal lady to his colleague at the Medical Faculty at Montpellier. "All this is quite impossible," exclaimed Dr. Grasset when he was informed of the new wonder. "Well, you will see," was the reply. Then the demonstration was made. The woman succeded in reading, at a distance, a letter, the envelop of which had been covered with seals and also posted as an additional precaution, and so Dr. Grasset was converted. Some skepticism on the subject is still permissible, nevertheless; yet what a vista of queer possibilities does not this open out, even if *La Femme Roentgen* possesses only a moderate share of the extraordinary qualities thus attributed to her!—*The Parisian.*

Sugar in Mullein Flowers.—Dr. Schneegans, while making periodic examinations of the urine of a diabetic patient, who had been put on a strict diet without carbohydrates, found for a few weeks no sugar, but suddenly a considerable amount was again noticed and continued with regularity, although the diet had not been changed. Inquiries brought to light that the patient regularly drank considerable quantities of strong mullein tea, which had been recommended him as a remedy for Bight's disease. This led the author to repeat the experiments of Rebling, who had found 11 per cent. of sugar in mullein flowers, which would fully account for the sugar in the urine. Schneegans then found in various samples from 9.2 to 11.7 per cent. of invert sugar, and small varying quantities of cane sugar, corroborating the results of Rebling. Traces of an alkaloid were obtained from the seeds.—*Jour. de Ph.* in *Ap. Ztg.*

Quantitative Determination of Sugar in Urine.—According to Foerster (*Pharmaceutische Zeitung*) a quantitative determination of the sugar in urine may be made by means of Fehling's solution without the use of an indicator, in the following manner: The solution must be so prepared that 10 c.c. exactly represents 10 c.c. of a 5 per cent. solution of glucose. The limit of reaction when sugar solution in an Erlenmeyer alembic still plainly shows up blue, but when poured into a white 20 gm. glass it is completely colorless. To this end the Fehling solution must be made somewhat stronger than usual, and instead of carrying 34.64 gm. of copper sulphate should contain 35 gm. to the liter. For the determination pour 10 c.c. of the urine into a graduate glass, add 10 c.c. of the glucose solution thereto and fill up with distilled water to the 100 c.c. mark. With this mixture the liter is taken exactly as in pouring in the solution. The amount of the diluted urine used must be divided by 50, and from the quotient subtract 5 gm. The remainder is the percentage of sugar in the urine. The addition of the grape sugar makes it possible to titrate freely without the liquid ceasing to boil. The precipitate settles quickly, and the color shown by the mixture enables the expert to determine the limit of the reaction very closely.—*National Druggist*, March.

Must Assert Privilege in Time.—Referring to the provision of the California code that a licensed physician or surgeon can not, without the consent of his patient, be examined in any civil action as to any information acquired in attending the patient which was necessary to enable him to prescribe or act for the patient, the supreme court of that State says that the privilege is personal to the patient, and is waived when he calls the physician himself as a witness, or when he permits him to give his testimony without making any objection thereto. If the patient once consents to his testifying, he can not, after the testimony has been given, revoke the consent, and ask to have it excluded. Such consent may be either implied or express, further holds the court, in Lissak vs. Crocker Estate Company, where it maintains that there was an implied consent when the plaintiff permitted the witness to be examined in full by the defendant without any objection.

The Death-dealing Properties of Modern Ammunition.—The deadly effects of firearms is being steadily increased by the constant improvements which are being made. The *Scientific American* says that the deadly effect upon game of small, metal-covered expanding bullets, with high-velocity smokeless powder, has been recently satisfactorily demonstrated. Modern weapons possess several advantages over the old large calibers in flatness of trajectory, absence of smoke, long range, increased penetration, high velocity, less recoil and light-weight ammunition. The expanding bullet produces invariably an area of laceration greater than ever effected by any projectile before used. Without calculating the effect of the nervous shock, extensive splintering of bone and laceration of tissue are produced. The secret of the deadly effect of these small projectiles lies in their expanding qualities and extraordinary high velocity resulting from the use of smokeless powder, which is only possible when confined in small calibers. These facts are of interest not only to the members of the profession who are notorious Nimrods, when in search of large game, but are of immense practical value to the army and navy surgeon.

Some Examples of Incompatability.—The fact that many alkaloids and similar substances frequently give physiologic results different from those expected, suggested to the *Ztsch. f. Krankenfl.* a discussion of these conditions, including a consideration of those medicinal substances, that suffer rapid decomposition and molecular rearrangement and those subject to deterioration during the process of preparation. As examples are mentioned the admixture of silver salts and organic matters; of salicylates with vegetable or mineral acids; sterilization of morphin and

cocain solutions. Ointments are frequently entirely inactive, when containing metallic salts in addition to a salt of morphin or cocain, as the alkaloids are always rendered insoluble by a slight excess of metallic salts. Simultaneous external and internal use of certain medicaments may also exert a disturbing influence on their action. If, for example, an oculist prescribes an ointment containing mercury and the patient takes potassium iodid internally, there will be a formation of mercuric iodid in the eyes, which considerably increases their inflammation. Quinin is not infrequently prescribed with substances containing tannin, an insoluble tannate of quinin being the result. Quinin is also slowly precipitated by potassium bromid. In the cases of iodin and bromin the reactions with quinin are not always simple, but at times these bodies enter directly into the molecule and change not only the structure, but also the physiologic properties and are liable to change it even into toxic bodies. During the sterilization of morphin solutions there is a liability, especially when the temperature is too high, of forming apomorphin, an alkaloid of totally different therapeutic action. A similar change may take place under like condition in the sterilization of cocain solutions.—*Ph. Post*, in *Pharmaceutical Era*, March 3.

Supreme Court of United States on Suicide of Sane Insured Person.—A most important decision, bearing on the legal effect on life insurance of a policy holder committing suicide while sane, was rendered by the supreme court of the United States, Jan. 17, 1898, in the case of Ritter vs. the Mutual Life Insurance Company. Here it approves an instruction of the jury that if the insured understood what he was doing, and the consequences of his acts to himself and to others (that is, if he understood, as a man of sound mind would, the consequences to follow from his contemplated suicide, to himself, his character, his family and others, and was able to comprehend the wrongfulness of what he was about to do, as a sane man would), then he was to be regarded as sane; otherwise, not. And if experience justifies the view that an application for a policy would be instantly rejected if expressly providing that the company would pay the sum named if the insured committed self-destruction, being at the time of sound mind, the supreme court insists, it would follow that a policy stipulating generally for the payment of the sum named in it upon the death of the insured, should not be interpreted as intended to cover the event of death caused directly and intentionally by self-destruction while the insured was in sound mind, but only death occurring in the ordinary course of his life. But the court goes still farther and holds that if a policy—taken out by the person whose life is insured, and in which the sum named is made payable to himself, his executors, administrators or assigns—expressly provided for the payment of the sum stipulated when or if the insured, in sound mind, took his own life, the contract, even if not prohibited by statute, would be held to be against public policy, in that it tempted or encouraged the insured to commit suicide in order to make provision for those dependent upon him or to whom he was indebted. Nor does it consider that the case is any different in principle when such a policy is silent as to suicide, and the event insured against—the death of the insured—is brought about by his wilful deliberate act when in sound mind.

Coroner's Verdicts not to be Considered in Civil Cases.—Upon a rehearing, in the case of the Germania Life Insurance Company vs. Ross-Lewin, the supreme court of Colorado reverses the position it first announced, and rejects the construction which the supreme court of Illinois has put upon a statute similar to that of its own State and upon which statute the latter one was previously modeled, relative to the use of coroner's verdicts. It now takes the ground, Dec. 20, 1897, that the purpose of the coroner's inquisitions is merely to furnish the foundation for a criminal prosecution in case the death is shown to be felonious, and are of extrajudicial character. It says that in case of death under suspicious circumstances, or resulting from accident, the rule permitting inquisitions to be used in evidence would result in a race and scramble to secure a favorable coroner's verdict that would influence, and perhaps control, in case suit should be instituted against life insurance companies upon policies of insurance, and in cases of accidents occurring as the result of negligence on the part of corporations operating railways, street-car lines, mining for coal or the precious metals, etc. Law writers of late have frequently animadverted upon the carelessness with which such inquests are frequently conducted, and to allow inquisitions to be used in a suit between private parties upon a cause of action growing out of the death of the deceased, continues the court, would be to introduce an element of uncertainty into the practice, which, it thinks, would be contrary to public policy, and pernicious in the extreme; and for these reasons, the court concludes, upon careful consideration, it says, that the safer and better rule is to exclude such inquisitions.

Hypnotism Before the Court.—In the surpreme court of California, in the case of the People vs. Ebanks, the ruling of the Trial Judge in reference to the effects of hypnotism upon the defendant, are interesting. The decision was reviewed by the supreme court of California. In this case a witness was called by the defendant who was charged with murder and an offer was made to prove by him that he was an expert hypnotist, that he had hypnotized the defendant and that when hypnotized the defendant had made a statement to him in regard to his knowledge of the affair, from which statement the witness was ready to testify that the defendant was not guilty and that defendant denied his guilt while in that condition. The Trial Judge sustained an objection to the testimony. He said: "The law in the United States does not recognize hypnotism. It would be an illegal defense and I can not admit it." Commissioner Searles, who prepared the opinion of the supreme court of California, wherein it, Aug. 23, 1897, affirmed the judgment of conviction of murder in the first degree, said "We shall not stop to argue the point, and only add the court was right." Commissioners Belcher and Chipman concurred. Justice McFarland said: "I concur in the judgment and in the opinion of Commissioner Searles, but what is said in the opinion on the subject of hypnotism must be taken as applicable to the testimony offered on that subject in this case, which was clearly inadmissible, and not as covering the whole subject. It will not be necessary to determine whether or not testimony tending to show that a defendant committed the act charged while in a hypnotic condition is admissible until a case involving that precise question shall be presented." In this utterance, Justices Henshaw and Van Fleet concurred.—*Medico-Legal Journal*, December.

Qualification of Expert as to Poisons.—Notwithstanding that the supreme court of Colorado says it is seldom that a witness is presented whose general competency, not only in the practice of medicine, but in toxicology, is so well established as was that of Dr. Eskridge upon the trial of the case of the Germania Life Insurance Company vs. Ross-Lewin, the trial court refused to receive his testimony with reference to the effects of cyanid of potassium upon the human system, for the reason that he had had no actual experience with poisoning from cyanid of potassium. This ruling the supreme court pronounces clearly erroneous. It says new poisons are constantly being discovered by scientists, and under the rule announced by the district court all inquiry as to the result of such new poisons upon the human system from experts would be excluded. In fact, under that rule, expert evidence would be excluded in all except those cases in which some of the usual and well-known poisons were resorted to. And the supreme court suggests that it would offer a premium to the ingenuity of criminals and others in the

selection of rare and unusual poisons to destroy human life. For these reasons, the court declares the rule entirely too technical, and not supported by reason or authority. Moreover, while in some States it has been held that the decision of the trial court upon the competency of a witness to testify as an expert is conclusive, the supreme court of Colorado takes this opportunity of declaring for the contrary rule as supported by the weight of reason and authority and because it has the sanction of the supreme court of the United States.

Better Have Your Family Physician.—

Jest keep the heart a-beatin' warm,
Be kind ter every feller;
Look fer the rainbows in the storm,
But—carry yer umbreller!

Be brave ter battle with the strife,
Be true when people doubt you;
Don't think that money's all in life,
But—carry some about you!

An' when it's time ter shuffle off,
An' you have done yer mission,
Jest put yer trust in Providence,
An' call a good physician!

—*Atlanta Constitution.*

Recent Experiences with Cataract Operations.—At the recent Moscow Congress, Knapp of New York reported 1050 cataract operations, of which 400 included all complicated cases. The method of operation was usually a simple extraction without iridectomy, and the incision at the border of the transparent cornea almost half its extent. The capsule was opened with the cystitome to the extent of 5 or 6 mm. in the upper part of the iris, so that the torn pupillary edge of the iris and the wounded capsule should not touch. Pressure at the lower part of the cornea easily delivers the lens, but contact of the border of the lid and the corneal wound should be avoided. Both eyes are bandaged afterward and the dressing changed after twenty-four hours, when any prolapse of the iris can be disposed of. Reaction of an inflammatory nature was limited to six cases of slight iritis, two cases of partial wound infection and four cases of purulent infection of the cornea. In 355 operations prolapse of the iris occurred fifteen times (7.6 per cent.) and was successfully treated by iridectomy. Secondary operations were done in 40 per cent. of the cases. In three cases glaucoma following discission was observed. Recovery was obtained by means of iridectomy, eserin and morphin. In the last 400 cases good vision was obtained in 93 per cent., fair in 4.5 per cent. and total failure in 2.4 per cent.—*Archives of Ophthalmology.*

Therapeutic Value of Spleen Extract.—The *Edinburgh Medical Journal* for February, contains the results of an investigation extending over two years and establishing the therapeutic value of this extract. Briefly, "it aids digestion and nutrition, increases the cutaneous activity, stimulates the glandular activity of the skin, etc." In the first class of cases, chronic inertia, mental and physical, after a year's treatment the mental result was *nil* in a few, slight improvement in a few and recovery in two. The second class included recent cases of insanity due to physical exhaustion and the results were more prompt, first physically, then mentally, the majority being improved and some completely restored. The effect on the pulse and temperature, the bowels and urine, is yet to be determined definitely; in some the appetite improved, in more the digestion; the weight curves varied, increase of weight being the rule; in all the women there was increase of hemoglobin and red blood cells with one exception; color and warmth of the skin with softness and elasticity was noted; mentally, exhibition of temper was noted in both sexes, more so in the males. The author had previously used thyroid extract with no success in these mental cases. He believes that, "spleen extract, if less phenomenal in its effects than thyroid, is conducive to more lasting results, that it is surer, and still more important, exceedingly safe," but much smaller doses are sufficient to produce pyrexia, etc., especially after use of the etherial extract.

Suits by Both Physician and Patient against Railway Company.—One of the points sought to be made in the case of Smith vs. the Chicago & Nothwestern Railway Company, an action brought to recover payment for medical services rendered in the treatment of an injured employe of the company, was that the plaintiff physician was estopped by having given testimony showing the service rendered and the value thereof, in an action brought against the company by the former patient, in order to enable the latter to recover therefor. On the trial, the jury were instructed that if the physician was a witness in the other case, and for the purpose of enabling his former patient to recover against the railway company, he gave testimony that he was the physician in attendance, and performed the services, and of their value, thus enabling the former patient to recover of the company for such services, he, the physician, was estopped to recover in this suit of his own. But this was followed by another instruction that if the jury believed that at the first trial, and when the physician was examined as a witness, in answer to the question with reference to his bill for services he said: "I have a suit pending against the company for my services, and I expect to collect for my services from the defendant," or words of a similar effect or import, then there would be no estoppel. This, the supreme court of Iowa holds correct, December, 1897. It says that the doctor owed the railway company no duty, when asked, on the first trial about his services, to decline to answer, and inform the court that he had a suit pending for such services. He was a witness in court, and, in a sense, under the direction of the law. The defendant company was present, with full opportunity to insist upon a disclosure of the facts; and if the witness gave them, and, in so doing, it was made to appear that he was a claimant for such services himself, the court maintains, the basis for an estoppel against him in his own suit failed.

New York Skin and Cancer Hospital.—The New York Skin and Cancer Hospital now has a proper building. For fifteen years it has occupied a dwelling house, 243 East Thirty-fourth street, which was altered over, but on March 5 the new hospital building, Second Avenue, corner Nineteenth Street, was opened with appropriate ceremonies. After a few introductury remarks by the president, Mr. J. Cleveland Cady, Dr. A. Jacobi, president of the medical board, made an address, dwelling on the necessity and value of special hospitals and the work of this, the only institution of its kind in the United States. Dr. L. Duncan Bulkley then made an address, reviewing briefly the origin and early history of the Hospital, and its work during the fifteen years of its existence. He called attention to the fact that the old city of New York had grown at the rate of 50,000 inhabitants a year for the past ten years, and suggested that the hospital accommodations had not kept pace with the growth of the city. He mentioned that most of the other special departments of medicine had special hospitals, but until the establishment of the New York Skin and Cancer Hospital there had been none of the kind in this city or country. He instanced the large provision made for skin diseases in Paris, Vienna, Berlin and all the cities of Europe, Great Britain having twelve special hospitals of this kind. Beginning in a very small way and with no endowment or pledged support, the Hospital had received $375,000 during the past fifteen years, of which $75,000 had come from board of patients, and also of drugs to out-patients. Of the $300,000 contributed from outside, the hospital now had $25,000 invested for five endowed free beds, and had paid $150,000 for the new building, which was free of debt; but, as it had no permanent or definite income, he earnestly asked gifts and moral support from those present. During the fifteen years the Hospital had treated 25,031 patients, of which 22,159 had been out-patients,

who had made 118,154 visits to the Hospital, and for whom 132,263 prescriptions had been written and filled. The in-patients had spent 165,077 in the Hospital. He called attention to the value of the Hospital as an educational center, instancing that thirty young men had been internes and had acquired a knowledge of these diseases second only to that obtained by prolonged study abroad. He also stated that it was proposed to have clinical lectures in the Hospital, free to physicians, which were to be further illustrated by a collection of Paris models and colored plates which had been loaned to the institution. The new building is a modern fireproof structure of four stories and basement, containing about sixty beds for patients. Of these, seven are in private rooms. On the top floor there is a modern operating room, well equipped, the Worden ward for children and most of the private rooms. On the next two floors are four wards for male and female patients with dieases of the skin and cancer. On the ground floor is the large out-patient room, with consulting rooms, pathologic laboratory, drug room, office, reception room, etc. In the basement there is a complete set of baths, including Turkish, Russian, needle and plunge; besides the kitchen, laundry, dining rooms, etc. The lighting, heating and ventilation are of the most approved kind.

Wanted.—We desire to secure a copy of No. 11, Vol. iii, of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION for completion of above volume for a foreign library. Anyone having this number to spare will confer a favor by returning same to this office and we will remit charges.

Acute Otitis and Mastoiditis Cured by Intercurrent Erysipelas.—Stein reports a case so severe that trephining of the apophysis was decided upon, when suddenly the patient was attacked with erysipelas of the nose, extending to the mastoid region and the diseased ear. The attack lasted two weeks and the other trouble vanished with it.—*Semaine Méd.*, December 15.

Histo-psychology.—In describing two cases that combined the two syndromes of meningism and catalepsy, Dupré ascribes them to two factors, a grave toxi-infection and a psychopathic predisposition. In toxic encephalopathy the form of the accident is determined at least as much by the psychopathic disposition of the subject as by the pathogenic properties of the poison (uremic). This explanation will probably be confirmed by the new science now being evolved by our progress in histologic technique and psychlogic analysis which Soury calls histo-psychology.—*Presse Méd.*, January 22.

Histologic Investigation of the Prostate after Castration, etc.—Extensive experimental research at the Histologic Institute at Nancy in regard to the atrophy of the prostate after castration, vasectomy and the new method of intra-epididymitis injection of a 20 per cent. solution of zinc chlorid resulted in evidences of regression of the glandular substance with considerable development of the interstitial conjunctiva, and the size of the gland very much reduced, especially in the pig. These results were invariably found after castration and also after the sclerogenic injections, not so constantly after vasectomy (beeves, sheep, pigs, dogs, guinea pigs).—*Presse Méd.*, January 22.

Gleanings.—An exhibit of universities is to be one of the features of the Paris Exposition.—Professor Ruggi of Modena recently performed his thousandth laparotomy.—Unilateral, repeated pains in the articulations, myalgia or neuralgia may prove the precursors of hemiplegia; especially important in the diagnosis if the vascular system shows a predisposition to the affection (*Journ. de Méd. et de Chir.*, 1898, No. 1).—If in convalescence from pneumonia the valvular sound assumes a "smothered" tone, becoming later "smothered and hard," it is an indication of incipient ulcerous endocarditis, which should receive prompt treatment without waiting for further indications (*Gazz. d. Osp. e d. Clin.*, January 20).—Jean Pasteur is said to receive $110 a day from Cornelius Vanderbilt, for his medical services, accompanying him on the yacht *Catania*.—The viceroy of India has sent to England for more medical assistance. He asks for eight physicians, two women physicians and twenty-five nurses.

Anatomic Alterations in the Genital Organs after Sexual Operations to Relieve Hypertrophied Prostate.—B. Floderus contributes an article to the *Nordiskt Med. Ark.* of January 10, based on the necropsy of thirty-six cases previously operated. In twenty the examination was both macro- and microscopic (testectomy fourteen, vasectomy five, combined one). He adds a number of illustrations which show that these operations fail to produce any alterations in the organized tissue of the prostate. The decrease in the size of the prostate, which, he adds, is inconstant and seldom equal to the extent of the hypertrophy, is not due to any alterations in the organized tissues but is rather to be attributed to a diminution in the elements circulating in the organ, the blood and the lymph. The importance of this diminished congestion from the functional point of view is less apparent in the prostate proper than in the prostatic portion of the urethra and neck of the bladder. In normal prostates a genital operation may induce alterations in the organized tissue, but this he considers impossible in senile hypertrophy to any appreciable extent. The evidences of fatty degeneration, etc., are no more than is observed in non-operated hypertrophied prostates.

Gladstone's alleged Indifference to Sanitary Legislation.—An old medical friend of Mr. Gladstone and who had been somewhat of a sanitarian all his life, is wont to complain that he has never been able to enlist the attention of that mind of large and multitudinous interests in questions of sanitary reform, questions of infinitely greater importance to Englishmen than the troubles of Bulgaria and Armenia. This venerable physician has come to the conclusion that sanitation lacks in those "showy" qualities that lead public men to become the champions of subjects that excite the *vox populi* The best way to get politicians to consider the public health is to educate people up to that point where the latter will begin to insist upon having that theme put as "a plank in every platform." When votes are to be caught by pledges on behalf of sanitary reforms and administrations are turned out for not redeeming such pledges, then will the statesman arise to the needs of the commonwealth, and we will view the upbuilding of a national Department of the Public Health. It is not difficult to imagine how different might have been the position of public medicine before the world if Mr. Gladstone had, in the early part of his career and later, adopted sanitation as one of his war cries. It can not be said that his attention was not properly called to the subject, for his lively foeman, Disraeli, in the 70's, threw down the challenge in a proposition that speedily sped around the English-speaking world, to the effect that "the first consideration of a minister should be the health of the people."

The Semeiologic Value of Abnormal Reactions of the muscles and nerves, was the subject of an address by E. Doumer at the Brussels Congress of Neurology. He asserts that it is only in quite exceptional cases that it is possible to excite exclusively the muscular fiber. In most cases the muscular reactions obtained by applying electric excitation to elective points on the muscles are due mostly to excitation of the terminal filaments of the motor nerves. The term "exploration of the muscles," used so frequently in electro-diagnosis, is therefore incorrect. The reaction of the muscle to the excitation of the nerve, shows that this excitation is transformed at the exciting point into a nerve wave which in its turn acts upon the muscle. After studying the abnormal reactions hitherto described

(reaction of degeneration, of compression, of the diathesis of contractions, myotonic, etc.), which are in reality electric syndromes formed by the elementary reactions, he arrives at the following important conclusions in regard to these elementary reactions: Faradic and also voltaic hypo-excitability may depend upon an alteration in the reacting organ (muscle), as well as upon an alteration of the excited nerve. It always corresponds to an alteration in the nervo-muscular system situated *below* or *at* the point excited. Among the qualitative modifications of voltaic excitations he asserts that what he calls "Erb's reaction" always corresponds to a more or less profound alteration of the peripheral motor neurons at the very point of the excitation. It is absolutely independent of the lesions which may be situated above or below this point. The other elementary reactions are still too little known for positive clinical deductions. He urges the adoption of methods of exploration in electrodiagnosis which will determine the characteristics of the excitation, and the curve of the reaction, and suggests that the principles necessary for the establishment of such methods may be found in Professor d'Arsonval's remarkable works.

Fatality Following a Controversy Between Medical Men.—A letter from the University of Bonn recites a tragedy following a difference between surgeons. An armed encounter between members of the medical profession at this the close of the nineteenth century was certainly not to be anticipated, but the old saying that it is always the unexpected which arrives has once more been verified. It is only too true that a duel was recently fought at Bonn, the combatants being both medical practitioners, and most unfortunately one of them met with his death from a penetrating wound of the thorax. It seems that two of the assistants of a surgical clinic named Reusing and Fischer, had a violent altercation over a professional matter, the former accusing his colleague of malpractice in the conduct of an operation, and as apparently there was no older and wiser person at hand to pour oil on the troubled waters a hostile meeting ensued, with the above mentioned deplorable result. That duels should still survive on the Continent, especially in military circles is perhaps not to be wondered at under the existing regime, but happily the vast majority of medical men of all nationalities are the possessors of well balanced minds, and recourse among them to the *argumentum baculinum* for the adjustment of technical disputes must be an altogether exceptional occurrence. Complaints are often heard of the overcrowding of the medical profession on the other side of the channel, but of all depletory methods the slaying of one's confrère is surely the least philosophic. A duel at the present day is an anachronism. As a mode of settling scientific controversy it is not only out of date, but also about the most illogic procedure conceivable. Killing an opponent does not prove the survivor's case; while the gratification of an ignoble feeling of personal resentment is dearly purchased at the expense of life-long remorse. The principals in a duel are blameworthy, but for them there are excuses, seeing that most human beings are more or less passionate by nature. For the seconds, generally speaking, there is absolutely nothing to be said. They are simply the abettors of a crime in which they run no bodily risk, and it is against them that retributive justice should be mainly directed. If seconds would only consider the heinousness of their position, there would soon be an end of dueling.

Ohio Law Constitutional.—The constitutionality of the Ohio law passed Feb. 27, 1896, "to regulate the practice of medicine in the State of Ohio," was attacked in the case of France vs. State. One objection made to the statute was that, by those provisions which authorize the medical board, for the causes therein mentioned, to refuse or revoke certificates of qualification required of physicians before they are entitled to practice in Ohio, and provide for an appeal to the governor and attorney general, it assumes to confer judicial power which, under the State constitution, belongs exclusively to the courts. Undoubtedly, says the supreme court of Ohio, Oct. 26, 1897, the authority conferred by the provisions referred to includes the power to examine into and decide questions requiring the exercise of judgment, such as might not inappropriately be conferred on a court. Nevertheless, it holds that the power conferred on the board is administrative in character, and not judicial, within the meaning of the constitution; nor made judicial by the circumstance that an appeal is allowed from its decisions to the governor of the State and the attorney general. It further holds that the statute is prospective in operation, and in no respect obnoxious to section 10 of article 1 of the Federal constitution, which forbids the enactment of *ex post facto* laws and bills of attainder by the States. Neither does it consider that the regulations adopted by this statute infringe upon the privileges and immunities guaranteed by section 2 of article 4 of the Federal constitution to citizens in the several States, nor abridge those secured to citizens of the United States by the fourteenth article of amendment of that constitution. It is competent, the court declares, for the State, under its power to provide for the welfare of its people, to establish needful regulations, and impose reasonable conditions, calculated to insure proper qualifications, both with respect to learning and moral integrity, of persons desiring to engage in the practice of medicine in the State, and require compliance therewith by such persons before they shall be permitted to practice within the State. Of that character, it pronounces the regulations adopted by the statute in question, which it accordingly holds constitutional and valid.

Societies.

The following recent meetings are noted:

California.—Fresno County Medical Society, Fresno, March 1.

Connecticut.—Bridgeport Medical Society, March 2.

Illinois.—Chicago Pathological Society, March 14; East St. Louis Medical Society, March 7.

Indiana.—Bartholomew Medical Society, Columbus, March 1; Marion County Medical Society, Indianapolis, March 1; Monroe County Medical Society, Bloomington, March 8; Tippecanoe County Medical Society, La Fayette, March 2; Vigo County Medical Society, Terre Haute, March 3.

Iowa.—Semi-annual meeting of the Medical Society of the Missouri Valley, Red Oak, March 17.

Massachusetts.—Everett Medical Society, Boston, March 1.

Michigan.—Grand Rapids Medical Society, February 28.

Minnesota.—Minnesota Academy of Medicine, St. Paul, March 2; Ramsey County Medical Society, St. Paul, February 28.

Missouri.—St. Louis Medical Society of Missouri, March 12.

New York.—Binghamton Academy of Medicine, March 3; Broome County Medical Society, Birmingham, March 3; Herkimer County Medical Society, Herkimer, March 1; Hornellsville County Medical and Surgical Association, Hornellsville, March 1; Queens County Medical Society, Jamaica, March 1; Syracuse Academy of Medicine, March 8; Utica Medical Library Association, March 7.

Ohio.—Lucas County Medical Society, Toledo, March 4; Tri-county Medical Society, Conneant, March 1; Union Medical Society, Chicago, March 14.

Pennsylvania.—Luzerne County Medical Society, Wilkesbarre, March 2; York County Medical Society, York City, March 3.

Wisconsin.—Waupaca County Medical Society, Manawa, March 5.

Denver.

THE MEETING OF THE AMERICAN MEDICAL ASSOCIATION.—The Denver and Arapahoe Medical Society, to whose successful efforts the State of Colorado owes the honor of securing the next Convention of the AMERICAN MEDICAL ASSOCIATION will not be found dozing when the jolly Esculapians are here. It is not expected that the members of the ASSOCIATION, learned and devoted to pure science as they are, shall subsist on pure air, glorious sunshine and mountain views. The people of Colorado, the medical men as a body, with the Denver and Arapahoe Medical Society at the head, intend to also add to the spir-

itual pleasures those of the flesh. The society has appointed a committee on entertainment consisting of men versed in that particular branch of science, and they will fulfill their onerous duty to the satisfaction of all. The entertainment to be given by the local medical society will be one of the prominent features of the convention, and the palate of the most fastidious will never forget the event.

Dr. CARL JOHNSON, vice-consul and port surgeon. Dr. Johnson has sailed for Amoy, China, at which port he will serve in the above double capacity.

Cincinnati.

THE mortality report for the week shows: Still-births, 8; zymotic diseases, 13; phthisis, 12; other constitutional, 6; local, 59; developmental, 11; violence, 6; under one year, 21; between one and five, 15: total, 107; annual rate per thousand 13.73; preceding week, 117; corresponding week, 1897, 103; 1896, 120; 1895, 123.

Dr. W. E. LEWIS announces a class in anatomy for students in medicine, dentistry, art, physical culture, calisthenics and obstetrics, open to both sexes, beginning April 4; class to meet Monday, Wednesday and Friday from 8 to 9 P.M., at the Cincinnati College of Medicine and Surgery.

THE ACADEMY OF MEDICINE held their annual election March 7, and the following officers were chosen: President, Louis Schwab; vice-presidents, J. C. Oliver and Estella Riley; treasurer, S. E. Allen; secretary, W. H. Crane; financial secretary, M. A. Tate; corresponding secretary, F. E. Kugler; trustees, A. I. Curson, N. P. Dandridge and J. T. Whittaker.

THE representatives of the several medical societies have joined in an attempt to secure an amendment of the present medical law. The intention is to increase its present effectiveness by making it more stringent and more in conformity with the medical laws of New York, New Jersey and Pennsylvania which are much more rigorous than the twenty other States having a specific law. The outcome of this proposed amendment will be to practically make the Board of Registration a board of examination for the licensing of all practitioners of medicine, whether graduates or not.

THE ANNUAL REPORT of the State Board of Registration and Examination gives the following summary: Total number of certificates issued, 8231; to graduates, 7521; to legal practitioners, 697; by examination, 13; number rejected, 339; graduates, 121; legal practitioners, 204; examination, 14. Cash balance on hand at beginning of the year, $5,460.56; disbursements, $10,429.87; total deposited with State Treasurer since passage of the Musgrove Law, $25,919.62.

Detroit.

WAYNE COUNTY MEDICAL SOCIETY.—At the regular meeting of this society, March 10, Dr. W. C. Stevens read a paper on "Habitual Abortion." The Doctor took up the subject only in so far as it relates to those cases of habitual abortion which result in women who show no signs of hereditary taint, or any constitutional dyscrasia, and who have no lesion of the parturient canal. He reported the history of a case occurring in his own practice of a woman, who during her twenty-five years of married life, had been pregnant thirteen times. Seven times she aborted and six children were born to her at full term. The etiology of the case was very obscure, as there was no apparent cause for the abortions, either local or general. During treatment her gestation would go on to full term, but if the treatment were remitted abortion would supervene. The treatment recommended by the Doctor in this and similar cases was the absolute avoidance of heavy work, hygienic measures, properly fitting and light garments (the skirts being supported from the shoulders), plenty of sleep, and daily sponge baths. The medicinal measures consist in the use of mild laxatives when necessary, tonics, assafetida, Jamaica dogwood and black haw. Dr. Lucy J. Utter read a paper on the subject of the "Constitutional Causes of Abortion," referring particularly to syphilis as an etiologic factor. Dr. C. D. Aaron presented a paper on the "Relation of Hemorrhage of the Stomach to Menstruation." The Doctor stated that hemorrhage from the stomach may occur in gastric ulcer, carcinoma, heart disease, portal obstruction, cirrhosis of the liver, scurvy, yellow fever, acute yellow atrophy of the liver, rupture of an aneurysm and active hyperemia. To the last named class belongs hemorrhage from the stomach co-incident with menstruation. The Doctor concluded that patients who suffer from gastric hemorrhage always present symptoms of indigestion, and that therefore when a patient exhibits symptoms of indigestion during a menstrual period in which the flow is scanty, gastric hemorrhage must be *suspected* even though vomiting does not occur.

Philadelphia.

COLLEGE OF PHYSICIANS. — "A Consideration of the Real Value of the Cold Bath Treatment of Brand in Typhoid Fever" was the title of a paper by Dr. Hobart A. Hare, which led to a spirited discussion at the meeting held on the 2d inst. The fact that the author had himself recently suffered with a severe attack of typhoid and had enjoyed (?) a personal experience of the Brand method, in addition to the fact of his prominent position as a writer and teacher of therapeutics, gave special interest to the expression of his views upon this important subject. He said that a very decided decrease in the mortality of typhoid fever had unquestionably occurred of late years, but much of this is undoubtedly to be ascribed to improvements in nursing, in sanitation, and in other methods of treatment, which are now employed in conjunction with the Brand system. In reply to his own query of how much of the improved mortality is fairly to be ascribed to the baths, he said that the difference between 10 per cent. mortality when the baths are not given and 7.5 per cent. when the baths are given, or 2.5 per cent., might be fairly credited to the cold bath treatment. Against this he placed the facts that the course of the disease is prolonged, hemorrhages and relapses appear to be more frequent, and perforations occur in the same proportion and certainly are not lessened in frequency. While admitting the usefulness of the bath in appropriate cases, he deprecated its too frequent employment, protesting against routine management. In the great majority of cases the early use of calomel, symptomatic treatment, and moderate stimulation, with cold sponging, not merely to the extremities but the back especially, to reduce pyrexia, would prove sufficient, with the aid of proper diet and judicious nursing, to bring about recovery of the patient, but each case should be considered as an individual one and treated on its merits as an individual. In the discussion, the advocates of the Brand method were decidedly in the majority. Dr. Wm. Osler said that at Johns Hopkins, out of 684 cases treated, the mortality was 8.1 per cent. and he was convinced that if generally used throughout this country, the Brand method would prevent five or six deaths out of every hundred cases of typhoid fever, cases which in his opinion could not be saved by any other known method of treatment. Dr. James Tyson stated that there is not only a decided reduction in the mortality rate, but there is also less delirium and less diarrhea, and the type of the disease is made milder. He had not seen any harmful effects and preferred the routine employment, on account of the fact that although discrimination is desirable, it is difficult and not always practicable. Dr. John H. Musser endorsed the preceding speaker's remarks and said that he had never witnessed any ill effects, but on the contrary had observed relief from threatening complications. He advised modification of the cold bath in certain cases. Dr. J. P. Crozer Griffith said that at the Children's Hospital he is accustomed to place the little patients at first in a warm bath (95 degrees F.) and then to gradually reduce the temperature (to 85 degrees) and claimed great reduction in the mortality. Dr. H. C. Wood, basing his remarks on twenty-five years experience with this method, stated that each years use only confirms him the more as to the value of the cold bath treatment of typhoid fever. He considered the object of the treatment to be the abstraction of heat as rapidly and with as little violence as possible to the patient. He thought that it might have contraindications, especially when begun late in the course of the fever, and in asthenic cases. Dr. S. Solis Cohen said that he finds the application of the ice bag over the abdomen a useful expedient to reduce temperature. In reply to Dr. A. V. Meigs, who criticized the method and denied that it accomplished all that had been claimed for it by enthusiastic advocates, Dr. A. A. Eshner said that Brand did not advocate the indiscriminate and routine employment of cold baths, but on the contrary their systematic and discriminate employment. Dr. T. M. Balliet claimed that where bathing with cold water was not practicable, as among the very poor, he had exposed the fever patient to cold air, with the same object in view, and had never seen ill effects.

In closing the discussion Dr. Hare explained that he did not dispute the value of hydrotherapy in typhoid fever, but deprecated routine treatment of any kind. It may not be amiss to add that, in private conversation, Dr. Hare referring to his own experience with the cold bath, stated that he dreaded

them more than he could describe and that in the whole course of his disease he could only summon up resolution enough to take three. He also remarked that even if he knew that the cold bath would improve his chances of recovery 25 per cent. he would refuse to take them except out of regard for and a strong sense of duty to his wife and children. His own personal experience with the treatment as administered at one of the best city hospitals had inspired him with such a physical antipathy and dread to the cold bath that he could never prescribe it as a routine measure and would only use it where it was imperatively demanded. He did not regard it as a finality in the treatment of typhoid fever and hoped in the course of a few years to see a more humane and less disturbing method take its place in the estimation of the profession.

At the same meeting, Dr. Thomas H. Dunn of Westchester reported a case of "Parasitic Chyluria" occurring in an adult woman, who had always lived in Pennsylvania. For several years she had been subject to headache with gastro-intestinal disturbance and suppression of urine, the attacks lasting about two days. Following this she passed milk-colored urine, which not only contained albumin, red and white blood cells and fat, but also many active organisms, which were found to be embryonic *filariæ sanguinis hominis*. This case, according to Dr. Osler, was the first of which he had any knowledge, in which the disease was undoubtedly contracted in the North. Dr. F. P. Henry had exhibited specimens before the College in 1896, of living filaria in blood taken from a colored woman, 29 years of age, who was formerly a resident of Florida, where it was believed she contracted the disease.

THE BOARD OF HEALTH of Philadelphia in opposition to the sentiment in the profession which led to the appointment of a committee some weeks ago, to confer with the Board and attempt to secure some modification of the rules requiring the placarding of private houses for cases of infectious disease, has issued the following circular:

WHEREAS, The members of the Board of Health of Philadelphia are unanimously of the opinion that the strict enforcement of Section 2 of the "Act to provide for the more effectual protection of the public health," approved June 18, 1895, is absolutely necessary to prevent the spread of disease, and

Resolved, That hereafter, without exception, all cases of cholera, smallpox (variola or varioloid), scarlet fever, typhus fever, yellow fever, relapsing fever, diphtheria, diphtheric croup, membranous croup, or leprosy shall be placarded. This is to be done by placing a placard at the most conspicuous point of every entrance of the affected premises. Should the medical inspector be in doubt as to what is the "most conspicuous point," or as to the necessity of further placarding, isolation or quarantine, he shall at once communicate with the chief medical inspector and follow his instructions.

All reports of the placarding of houses shall be made in duplicate, a copy of which shall be forwarded to the superintendent of police, who is requested to have them referred to the respective police districts, and the lieutenant instructed to report to the superintendent all cases in which the placard is removed. Such reports to be returned forthwith to the bureau of health.

When it is reported at the office of the chief medical inspector that the placard may be removed, he shall notify the superintendent of police in the same way he used to notify him of the original placarding.

THE POLYCLINIC HOSPITAL free lectures on popular medical subjects which were delivered by the Faculty last spring, met with such favorable reception that a similar course has been arranged for the present Lenten season. The dates and subjects are appointed as follows, all lectures being given at 5 P.M.: March 4, The Filtration of the Water-supply of Philadelphia, by Henry Leffmann; March 9, The Prevention of, and Nursing in Typhoid Fever, by Augustus A. Eshner; March 11, The Hygiene of the Infant, by Edward P. Davis; March 16, The Care of the Eyes and the Influence of Defective Vision upon Mental and Physical Growth, by Samuel D. Risley; March 18, Surgical Emergencies, by Lewis W. Steinbach; March 23, The Essentials of Health, by Judson Daland; March 25, Hypnotism and Allied States, by William G. Spiller; March 30, The Cultivation of the Voice, by G. Hudson Makuen.

CHANGE OF ADDRESS.

Ammerman, U. S., from Keokuk, Ia. to Harbine, Neb.
Bardon, F., from Keokuk, Ia. to 621 Monroe St., Quincy, Ill.
Back, A. J., from Keokuk, Ia. to Montpelier, Ohio.
Buzarg, I. S., from Keokuk, Ia. to Belinda, Ia.
Booth, F. H., from 857 W. North Ave. to 662 Cortez St., Chicago, Ill.
Brenholtz, W. S., from Columbia to 36 E. Walnut St., Lancaster, Pa.
Beadles, E. St. Clair, from Water Valley, Miss., to San Diego, Cal.
Frissell, S., from 18 School St. to 181 State St., Springfield, Mass.
Friedel, M. J., from 468 Grand Ave. to 1228 Milwaukee Ave., Chicago, Ill.
Garvin, W. C., from Millington to Vassar, Mich.
Ghrist, D. M., from Keokuk to Pella, Ia.
Hart, H. H., from 114 Powell to 2325 Bush St., San Francisco, Cal.
Jackson, G. E., from Wheaton to 252 Nicollet Ave., Minneapolis, Minn.
Luburg, J. N., from Keokuk, Ia. to Stafford, Ohio.
Layton, C. S., from Durand to Delray, Mich.
Morton, E. E., from Keokuk to Vincent, Ia.
Mitchell, A. H., from Deer Lodge to Warm Springs, Mont.
Noren, G. P., from Keokuk, Ia. to Geneseo, Ill.
Reed, W. H., from Keokuk to Perry, Ia.
Russell, C. R., from Keokuk to Ottumwa, Ia.
Rectanus, F., from Cincinnati, Ohio, to cor. Preston and Market Sts., Louisville, Ky.
Shollenberger, C. F., from 2162 Larimer St. to 2309 Larimer St., Denver, Colo.
Thomas, C. H., from Dansville, N. Y. to 1633 Locust St., Philadelphia, Pa.
Van Slyke, W. H., from Detroit to Tamarack Mine Hospital, Calumet, Mich.
Whiting, E. D., from Alma, Mich. to Presbyterian Hospt., Chicago, Ill.

LETTERS RECEIVED.

Arnold, Philip, Elizabeth, Ill.; Alta Pharmacal Co., St. Louis, Mo.; Atwood Mfg. Co., Amesburg, Mass.; Ames & Frost Company, Chicago.
Bulkley, L. Duncan, New York, N. Y.; Ball, M. V., Warren, Pa.; Blaylock, Thomas, Springer, I. T.; Blees Moore Instrument Co., St. Louis, Mo.; Brothers, S. F., New York, N. Y.; Baker & Co., Ltd., Walter, Boston, Mass.
Class, W. J., Chicago, Ill.; Crane, A. W., Kalamazoo, Mich.; Cargile, Chas., Bentonville, Ark.; Crowell, H. C., Kansas City, Mo.; Coe, F. H. Seattle, Wash.; Coe, Henry Waldo, Portland, Ore.
Dellabaunty, D. F., Bloomington, Ill.
Eclipse Bicycle Co., Elmira, N. Y.
Ferguson, Frank C., Indianapolis, Ind.; Forrester, Joseph, Erie, Pa.; Fletcher, W. B., Indianapolis, Ind.; Farwell & Rhines, Watertown, N. Y.
Graham, J. W., Denver, Colo.; Gotham Co., The, New York, N. Y.; Goodwin, R. S., Thomaston, Conn.; Gleitsmann, J. W., New York, N. Y.; Goodrich Co., The B. F., Akron, Ohio.
Hektoen, L., (2) Chicago, Ill.; Hardin & Walker, Savannah, Tenn.; Hart, H. H., San Francisco, Cal.; Houghton, Mifflin & Company, Boston, Mass.; Howe & Co., C. H., Denver, Colo.
Imperial Granum Co., New Haven, Conn.
Jayne, W. A., Denver, Colo.; Justis Food Co., Syracuse, N. Y.; Jaques, W. K., Chicago, Ill.
Krüger & Co., Leipzig, Germany; Klein, W. L., Minneapolis, Minn.; Kelly, Howard, A., Baltimore, Md.
Lagorio, E. L., Norfolk, Va.; Lea Brothers & Co., Philadelphia, Pa.; Longmans, Green & Co., New York, N. Y.; Lehn & Fink, New York, N. Y.; Long, W. D., Reading, Pa.; Lewis, B. S., Camden, N. J.; Lord & Thomas, Chicago, Ill.
McLean, Angus, Detroit, Mich.; Marchand, Charles, New York, N. Y.; Medical Gazette Publishing Co., The, Cleveland, Ohio; Martin, Thos. Chas., Cleveland, Ohio; Maltine Co., Brooklyn, N. Y.; Monarch Cycle Mfg. Co., Chicago, Ill.; McCown, T. B., Chafin Bridge, Ill.
Newby, A., Nora, Ind.
Open Court Publishing Co., New York, N. Y.
Poole, W. H., Detroit, Mich.; Pope, E. D., Kountze, Texas; Purdue, Frederick Co., The, New York, N. Y.; Pilling & Son, Geo. P., Philadelphia, Pa.; Postum Cereal Co., Ltd., Battle Creek, Mich.; Pike, F. N., Fortress Monroe, Va.; Phillips Chemical Co., The Chas. H., New York, N. Y.; Prudential Insurance Company, The, Newark, N. J.; Pheno-Bromate Chemical Co., The, New York, N. Y.
Rose, F. L., (2) Chicago, Ill.; Reynolds, H. D., New York, N. Y.; Richardson, H., Baltimore, Md.; Ricker, S. J., Aurora, Ill.; Rosenthal, Edwin, Philadelphia, Pa.; Remington Arms Co., New York, N. Y.
Stoelting, C. W., Detroit, Mich.; Schwab, Leslie W., Chicago, Ill.; Strawbridge & Clothier, Philadelphia, Pa.; Sherer, J. W., Kansas City, Mo.; Sewanee Medical College, Sewanee, Tenn.; Silver, D. R., Sidney, Ohio; Sellars, Chas. B., Zanesville, Ohio; Seabury & Johnson, New York, N. Y.; Schering & Glatz, (2) New York, N. Y.; Steele, Robert E., Beaver City, Utah; Spratling, Wm. P., Sonyea, N. Y.; Sargent & Co., E. H., Chicago, Ill.
Turnbull, Laurence, Rock Ledge, Fla.; Tiemann & Co., George, New York, N. Y.; Tilden Company, The, New Lebanon, N. Y.
Upjohn Pill & Granule Co., Kalamazoo, Mich.
Vance, A. J., Harrison, Ark.
Yates, H. W., Detroit, Mich.; Yocom, A. L., Chariton, Ia.
Welch, William H., Baltimore, Md.; Woodruff, Chas. E., New Orleans, La.; Wocher, Max & Son, Cincinnati, Ohio; Ward Brothers, Jacksonville, Ill.; Welch Grape Juice Co., The, Watkins, N. Y.; Western Wheel Works, Chicago, Ill.; Williams Company, The J. B., Glastonbury, Conn.

THE PUBLIC SERVICE.

Army Changes. Official List of Changes in the Stations and duties of officers serving in the Medical Department, U. S. Army, from March 5 to 11, 1898.

Capt. Norton Strong, Asst. Surgeon, is granted leave of absence for six months on surgeon's certificate of disability, to take effect upon the expiration of the ordinary leave of absence granted him.

First Lieut. Thomas S. Bratton, Asst. Surgeon, upon the arrival at Ft. Niobrara, Neb., of First Lieut. Brainard S. Higley, Jr., Asst. Surgeon, will be relieved from duty at that post and ordered to Ft. Leavenworth, Kan., for duty.

The following named medical officers are relieved from duty at the Army Medical School in Washington, D. C., to take effect upon completion of the course at the school ending April 1, 1898, and ordered to take station as follows: First Lieut. Henry Page, Asst. Surgeon, Presidio of San Francisco, Cal.; First Lieut. Bailey K. Ashford, Asst. Surgeon, Ft. Sam Houston, Texas; First Lieut. Henry A. Webber, Asst. Surgeon, Ft. Reno, Oklahoma Ter.; First Lieut. Jere B. Clayton, Asst. Surgeon, Ft. Clark, Texas; First Lieut. Brainard S. Higley, Jr., Asst. Surgeon, Ft. Niobrara, Neb.; First Lieut. George Rauchfuss, Asst. Surgeon, Ft. Apache, Ariz.

A board of medical officers to consist of: Col. Dallas Bache, Asst. Surgeon-General; Major Walter Reed, Surgeon; Major James C. Merrill, Surgeon; Capt. William H. Arthur, Asst. Surgeon; First Lieut. Alexander N. Stark, Asst. Surgeon, is constituted to meet at the Army Medical Museum Building in Washington, D. C., on Monday, May 2, 1898, at 10 o'clock A.M., for the examination of candidates for admission to the medical corps of the Army.